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ABSTRACT

This paper reports on a study which investigated socioeconomic, academic, and psychosocial factors that might affect enrollment and persistence rates of black women in science and health careers. An overview is presented of women in science, black women's status in science, role models and support groups, other factors affecting persistence, and pertinent theories such as fear of success, the "imposter syndrome," and achievement motivation. The study methodology and sample selection process are then described. After a pilot study to test the questionnaire, analyses were carried out on a sample of high school students that included male, female, black, and white science and non-science majors, as well as on 67 college senior science majors at four predominantly black colleges in Georgia. The personal goals, career goals, and family expectations and support of each cohort were explored, as were the internal and external control of career development, and behavioral characteristics. Indices for each behavioral characteristic were developed and analyzed by multiple regression. This paper ends with a profile of the black adolescent pursuing a career in science, projections for the longitudinal sample studied, and recommendations for future studies. Extensive appendices present the survey instrument and tabular data on the variables examined. (CMG)

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Finally, we are grateful to the young men and women in this study who allowed us to enter their lives. We have made a sincere effort to be fair to them in our analyses. We hope that we have succeeded. We wish for them success, and the fulfillment of all their dreams.

I. THE PROBLEM: A RESTATEMENT

The educational status of black female adolescents has been analyzed traditionally in terms of: (1) early socialization practices within black families; (2) white society's preferential treatment of greater acceptance of black females over black males; (3) black female's ability to acculturate or to adjust themselves more easily than black males to the demands of white society; and (4) the tendency of females in general to receive better high school grades than boys (Bernard, 1966).

In general, however, black girls have been an ignored and invisible population (Lightfoot, 1976). It has been indicated that this situation exists because black female adolescents tend to exhibit fewer behavioral difficulties (Pettigrew, 1964) than her male counterpart (Smith, 1982). There have been assumptions that many of the educational and socialization problems facing white girls apply uniformly to black females as well. The socialization processes may be similar; however, there are important cultural and historical differences between them.

As Ladner (1971) has maintained: "Becoming a woman in the low-income black community is somewhat different from the routes followed by the white middle-class girl. The typical black female adolescent grows up realizing that she will assume the dual roles of mother and worker when they enter adulthood." There is no single set of experiences that characterize the lives of black female adolescents. Each is influenced by family background, socioeconomic status, available role models and opportunities, and the extent to which she incorporates both the values of the mainstream and black culture.

Women in Science

In 1976, women represented 37% of all those pursuing graduate education on a full time basis. In 1979, a dramatic ten percent increase was noted in this same category. While it is possible that some minorities were "missed" in this statistical compilation since it generally takes blacks more than twelve years to complete the doctorate, as compared to the majority ethnic all blacks represented only 2.7% of those pursuing graduate education. It is apparent that very few blacks are engaged in activities which will result in a substantial influx of black scientists into the work force in the United States.

Several studies have been initiated to determine the status of women in science. These studies, however, almost always fail to point out substantive differences in the rate of access to minority women into science and technology, or health-related careers.

The Status of Black Women in the United States in Science and Technology

In 1976, black women represented 5.7% of the U. S. population. They received a 3.6% of BA degrees, 4.3% of all MA degress awarded, 1.5% of all Ph.D. degrees and 1.1% of all first professional degrees awarded. White women, who represented 45% of the U. S. population in 1976 received 40% of all BA degrees awarded, 42% of all MA degrees, 23% of all Ph.D. degrees and 14% of all professional degrees awarded.

In 1979, black women received 4.0% of all BA's as compared with 2.6% of the degrees which were awarded to black males. (Black women represented 5.8% of the U. S. population; black men represented 5.3% in the U. S. population). White women, who represented 44.7% of the population received 42.8% of all BA's, as compared with 46.2% of BA's being

awarded to white males, who represented 42.8% of the population. BA's in science awarded in 1979 were 3.0% to black women, 2.9% to black men, 31% to white women and 58.3% to white males.

Among Ph.D.'s awarded in science, black women received 1.1% of the degrees awarded as compared with black men who received 1.7% of Ph.D.'s in science. White men received 66.5% of all Ph.D.'s in science, and white women received 20.8% of all Ph.D.'s awarded in this area. In general, 67% of the white women, 88% of the white males, 57% of the black males and 37% of the black women who received degrees persisted in science related graduate study in 1979.

The above data are not based upon a longitudinal study but rather represent an extrapolation of data compiled by Thomas, (1980). The data does point to a continuing discrepancy between black and white entry into areas necessary for careers in science/math/technology. A National Science Foundation study indicated that from 1971 to 1979 all freshman women expressing an interest in science and engineering in 1975 increased from 25% to 30%, while black women with science interest increased from 2% to 4%.

Further, the percentage of high school minorities planning careers in science and engineering in 1975 was only about one-half the percentage of whites. In addition, unlike white females, relatively few minorities have developed interest and background skills needed for careers in science prior to college entry (NSF, Projections of Degrees and Enrollment in Science and Engineering Fields to 1985; NSF 76-301).

Data from the Atlanta University Resource Center for Science and

Engineering show that while there was a 17% increase in total mathematics and science enrollment by black students in selected colleges from 1976-1981, there was a 5% decrease in total math and science graduates. These data, while not sex specific do tend to highlight the continuing attrition of blacks from science and perhaps points again to under-preparedness or some culturally specific variable as being the main culprit in promoting the attrition of blacks in science and mathematics.

Therefore, while the future is likely to bring greater white females participation in Science, (NSF 77-304), the same trend does not appear to be as likely for black females. This observation highlights the increasing importance of NOT deciding that being female in society equally handicaps all women, regardless of ethnic origin. These studies and those of others on other ethnic populations indicate that the barriers to successful careers in science must be individually examined for each ethnic group and means developed to overcome these barriers must be, perhaps, specific in design.

Role Models and Support Groups

June and Fooks (1980) assessed the influencers on career direction of 117 black faculty and staff of both sexes at a large predominately white university. Their results indicated that respondents listed a person in the preferred area or occupation and mother as having equal importance as key influencers. Fathers ranked third. Further breakdown showed that females ranked mothers as the number one influencer. Buddy or close friend, person in the preferred area or occupation, and teacher were of equal influence.

Ross and Glasser's study which revealed that occupational mobility of

black youth was positively correlated with the supportive roles played by significant working adults with whom they have established meaningful relationships Burlew and Johnson's (1977) study of the career expectations of black college females pursuing traditional and nontraditional careers found that mothers are important role-models for their daughters in regards to choosing careers. Almquist and Angrist (1971) in another study of professional black women indicated that they acquired a favorable definition of the working mother's role. They saw that combining marriage and career can be done. Inconsistent with our findings, Almquist and Angrist (1971) found that career-salient women were more likely to indicate teachers and persons in the occupation as the most important sources of personal influence on their occupational choice. They also found that non-career salient women more often named family members or friends as role models. Pallone, Rickard and Hurley (1970) found in their study black males specified as key figures in descending order, persons holding the preferred occupations, their fathers or mothers, teachers, peers or brothers or sisters. Black females specified as key figures, in descending order, their mothers, persons holding preferred occupations, peers, brothers or sisters and relatives not of the immediate family. Their basic finding was that the most powerful role-model or influential person was of the same sex of the person in the preferred occupation.

Other Factors Affecting the Persistence of Black Women in Science

The cultural, social, psychological, and economic forces that influence the career paths of female scientists were examined by Cole (1981) who concluded that women have faced the traditional views that science was an inappropriate career, that women were less competent than

men in science and the fact that women have encountered significant amounts of discrimination against members of their sex within the scientific community.

Studies have indicated that over the course of their college years, women's major choices and occupational aspirations became increasingly traditional (Ernest, 1976). In 1980, women entered college less positively oriented toward math and science with the highest achieving women being most likely to understate their math and science activities (Parelius, 1981). One wonders what forces persist in our culture value system, school, the family or in the media which serve to cause young women to decline a career in science, even though she is well equipped.

According to some researchers, male/female differences in achievement probably reflect the interaction of biological, cognitive, psychosocial and experiential factors. Instructional experience appears to play an important role in observed male/female differences (Linn, et al. 1981).

Others suggest that career orientation, course counselling, lower expectation (personal and teacher) on academic performance, access to powerful models, the perceived image of science and early exposure to science may all play a role in the under-representation of blacks in the fields (Rowe, 1977).

An article by Konner (1982) reports that there is no evidence that girls and women are more social, more suggestible, have lower self esteem or less achievement motivation than boys or men or that boys or men are more analytic. In the realm of cognitive abilities, there is good evidence

for superiority girls and women in verbal ability and of boys and men in spatial and quantitative ability.

Scherrei and McNamara (1981) suggest that an interest in science or mathematics can be nurtured and developed by family encouragement and support for educational achievement, a strong instructional background in math and science, exposure to and encouragement from a dedicated teacher/ counsellor, and hands-on research experience. Perhaps the greatest need was for role models and mentors. It is of interest to note that in this study all the minority women reported negative interactions with high school counsellors who tried to lower their career and educational aspirations (Sherrei & McNamara, 1981).

Review of Pertinent Theories and Focus of This Research

Several investigators have examined the variables possibly impacting women who persist in science. This research project examined specifically Horner's Fear of Success (1968), Clance and Imes "Imposter Syndrome" (1978), and Role Model and Achievement Motivation (McLelland and Atkinson, 1953).

Achievement Motivation

Achievement Behavior is defined as behavior that is in competition with standards of excellence. Differences in standards or criteria by which success is measured in males and females may be an important factor in differential achievement behaviors exhibited (Crandall, 1969). The literature supports some differences in competition related attitudes and behaviors (Crockenberg et. al 1976; Barnett and Andrews, 1977).

Women relative lack of achievement has been attributed to deficiences in their achievement motivation (McClelland, Atkinson, Clark and Lowell, 1953;

Beroff, 1969), their high fear of failure (O'Leary, 1974) and fear of success (Horner, 1972). Women also experience less academic self-confidence and are less competitive (Maccoby and Jacklin, 1974). Most of the research, particularly, when it did offer that women did aspire to achieve either in the home or vicariously through their husbands (Lipman-Blumen and Leavitt, 1976; Stein and Bailey, 1973; Tangri, 1972) ultimately blamed the victim for lacking the internal standards or stamina necessary for achievement. Ultimately however, if the literature suggests that it is the beliefs of other people which generate and constitute strong external barriers inhibiting success for women. (Frieze, Fisher, Hanusa and Valee, 1978).

Several studies have been undertaken to explain how the need to achieve is instilled, its relationship to social class, the role of the teacher and how this need is expressed. The theory of achievement motivation (McClelland, 1961; Atkinson, 1958; Atkinson and Feather, 1966; Atkinson and Raynor, 1974) may help in understanding the changing patterns of, among other things employment of women (Baruch, 1967).

Achievement Motivation and the Black Woman

Achievement motivation, i.e. competition with a standard of excellence, may be less important for black women whose strivings may be related to responsibility (financial and family security) than by a need to achieve. The sense of responsibility may extend to enhancing the status of blacks, as high achieving black women writers encourage youth to attain careers and return to help black people (Lerner, 1973). There is, however, no clear research on why black women achieve or fail to do so. It is clear that they apparently suffer fewer role and internal conflicts in this area.

However, internal or external factors intrinsic to motivation are not yet identified.

Fear of Success

The factors which impact the personal and therefore professional lives of young career-oriented women has been intensely studied since McClelland and Atkinson published The Achievement Motive (1953). This document articulated several parameters which might influence career achievement. One popular theory emanating from discussion of parameters impacting achievement was the fear of success (FOS) construct proposed by Horner (1968). The FOS theory, simply stated, contends that women avoid success particularly in competitive situations involving men, because of a desire not to lose femininity or experience social disapproval and/or social rejection.

Since the introduction of FOS as a possible explanation for the distressingly low numbers of women, (as compared with men), who attain career success, a number of other variables e.g. external locus of control, (Midgley and Abrams, 1974), and premenstrual stress (Petty and Ferrell, 1975), have been associated with low achievement among women.

The FOS theory has come under stringent scrutiny, however, as more researchers, using different techniques and study populations, have initiated work in the provocative area of explaining achievement, or perceived lack of it, in women. Specifically, work by Tresemer (1977) and Zuckerman and Wheeler (1975), have questioned the data itself, as well as implications of such data.

It is well-beyond the scope of this research to establish, verify and validate the research techniques of other workers. It is our purpose here, however, to measure the prevalence of FOS, in several different populations, and to draw conclusions as to its existence, its level of impact (if it exists) in different ethnic populations, and to project any implications for achievement and thereby ultimate career success in black high school and college women.

Fear of Success and Black Women

Limited work has been performed on southern women and even less on southern black women. In addition, the development of a comparative data base e.g. black women/white women; science majors/non-science majors; black women/black men/white women/white men is not reported in any single body of research. We report data on these groups.

In addition, in order to test in some limited manner, Horner's (1969) assumption that the intensity of FOS increases with the subjects success potential we have examined samples of the southern population's high school and college students to determine whether statistically significant differences exist as these students advance academically, if FOS is identified as an operant in these geographical areas.

The Imposter Phenomenon

The imposter phenomenon was developed by Clance and Imes (1978) from psychotherapy studies on middle class, career-salient, high achieving, highly successful women, who had earned their Ph.D.'s and who were respected professionals, recognized for their academic excellence. These women, according to Clance and Imes, as a group feel that they are intellectual phonies, feel that they are overrated by their peers, and

negate any external variables which should support their excellence and achievement. Presence of this phenomenon is attributed to early family dynamics and societal sex-role stereotyping. The clinical symptoms are generalized anxiety, lack of self-confidence, depression, and frustration related to inability to meet self-imposed standards of achievement.

The Imposter Phenomenon and Black Women

The Imposter Phenomenon has not been verified in other similar populations, or validated in any other populations. This study examined the occurrence of "Imposters" in high school and college group, i.e. groups who have not yet made it up the career ladder. We attempted to determine if this theory has any validity in our populations of younger highly motivated black and white students. The data were also examined to determine if qualitative/quantitative statistical differences in responses occurred in any of the populations examined.

SUMMARY

The major focus of this study, therefore, is to characterize the population of students under study in terms of socioeconomic, academic and psychosocial factors which might, if they exist but are remediated, serve to enhance the enrollment and persistence rates of these young women in science. Data are presented to address all issues raised in the preceding discussion.

This study has rational significance because (1) black female adolescents have rarely been systematically observed and, (2) most black scientists and engineers in the United States were raised in the Southern States and come from low-income families (Jay, 1977; Jones, 1981). The study of our population, therefore, answers some

critical questions and raises others to be considered by policy and decision makers who must consider the continuing failure of the system to adequately serve a select segment of the population.

II. METHODOLOGY

Pilot Survey

Fifty black high school and college women between the ages of 15-22, from the southeastern United States, served as subjects in the pilot study. These women attended a women-in-science careers workshop at Morris Brown College during the Spring of '79.

Procedure

A questionnaire was constructed which consisted of 50 questions of the yes/no, scaled, and open-ended type. It was distributed to workshop participants while they were waiting for the workshop to begin. All questions were answered anonymously.

Data from this pilot study provided information which helped us to design our questionnaire for a three year longitudinal study which would follow senior high school students through their first three years of college.

Development of Instrument

The pilot questionnaire was mailed to our major consultants, Dr. Pauline Clance, Associate Professor of Psychology at Georgia State University; Dr. Shirley Malcom, American Association for the Advancement of Science; and Dr. Betty Vetter, Scientific Manpower Commission, for their input.

The consultants and staff's comments were instrumental in the revision of the final questionnaire.

The completed questionnaire consisted of 56 major questions which comprised 165 questions of the yes/no, scaled and open-ended type. Some

of the questions dealt with the basic characteristics of the subjects; fear of success theory; the imposter phenomenon, role model/achievement and expectations concerning career, marriage and motherhood. (A copy of the final questionnaire is found in Appendix A).

Coding Manual Development

A manual was devised to encode the responses from the questionnaire to the IBM coding sheets. The coding manual consisted of 56 main questions with 165 subquestions which corresponded to the numbers on the IBM answer sheet.

Training of Student Assistants

Student assistants were trained as coders for the project year. Their major responsibilities included: interpreting data from the survey form and transferring the responses to the IBM answer sheets. They assisted in the checking of the variable print-out for machine errors which involved proofing a list of variables against each answer sheet. This task required a considerable amount of attention to detail and time. Student assistants also provided a mutual spot check of their answer sheets to warrant against errors and were responsible for checking the frequency print-outs for each group of subjects.

Careful instructions were given to coders on how to classify open ended questions because of the vast variety of responses given by subjects. It was important that coders record responses in a consistent manner, therefore, all given responses were identified and classified resulting in a comprehensive list of all possible answers. In cases

where the coders could not classify a response, they were instructed to consult with the principal investigator.

After extensive training and coding exposure, students were able to code on an average of four (4) questionnaires per hour. Coders to date have coded seven hundred and fifty-five (755) questionnaires and the breakdown on these questionnaires is as follows:

		Black	White
Men	Science (High School)	78	67
	Non-Science (High School)	78	67
Women	Science (High School)	121	51
	Non-Science (High School)	121	51
Women	Longitudinal (High School)	26	6
Men	Longitudinal (High School)	16	6
Women	Cross-Sectional (Undergraduate)	67	0
Men	Cross-Sectional (Undergraduate)	0	0

Data Analysis

Analyses were carried out on ten groups of subjects. The high school data consisted of a subject pool of 634 male, female, black, white, science and non-science majors. The longitudinal or follow-up group consisted of 54 subjects, being male, female, black white, science and non-science majors.

The cross-sectional group consisted of 67 black females.

The study envisioned in this project required extensive data processing. There was a large amount of data involved, and the respondents and their responses had to be grouped and compared in a large number of combinations. Obviously, it was not possible to know in advance how all of these possibilities would turn out in practice. Additional possibilities will turn out in practice. Additional computer processing was necessary to statistically explore these relationships and their implications for the study as a whole. This resulted in additional and supplemental statistical analysis which gave the study greater scientific meaning and importance. Chi square frequency and Pearson's coefficient were generated for all data. Regression analysis was carried out on selected variables to determine if any variables were more significant than others in making inter-group comparisons.

Target Population

Seventeen high schools participated in the study with the largest pool of subjects coming from the Atlanta Metropolitan area. A general profile of the data on the school reflected that seven high schools were in the Atlanta area; three in the Dekalb area and seven were located in the Fulton County area. Thirteen high schools were public institutions and four were private. Fifteen of the high schools were coed, one was female and one was male. Seven of the high schools were predominantly black and eight were predominantly white. Three of the high schools were of high income, one was mediumhigh income, seven were medium income, five were low-medium and one was low evident income. (see Table I, Appendix B.)

Procedure

Eight hundred and twenty-one (821) high school seniors, male and female, black and white, science and non-science majors from 20% of the English class population were actually surveyed. At each high school a questionnaire was administered by project staff. The men, white, and non-science majors were added to the subject pool to provide comparison groups since many of the research questions dealt with differences based on sex, race, and/or the type of career chosen.

From the above subject pool, all black and white science majors were selected from those available so that the numbers of non-science majors would match the numbers of science majors on the basis of sex, race and type of school attended. Otherwise, the non-science majors were selected randomly from the questionnaire available.

College Sample

The questionnaire was administered to sixty-seven (67) college senior science majors at four predominantly black colleges in Georgia. We surveyed as many of the science majors as could be obtained from each college. These colleges were as follows:

Clark, Spelman, Morris Brown and Fort Valley.

We found that the number of black women science majors greatly decreased by the senior year. Therefore, we had a much smaller sample size to analyze. In order to get a significant pool of participants, we tested all of the science majors at the schools mentioned above or as many as could be obtained from that school.

Procedure

The investigators from the Center for Research were on hand to monitor and administer the questionnaire to the college population. The college group took approximately 30 minutes to one hour to complete the questionnaire.

Statistical data on general public characteristics of the colleges was obtained through the Office of Institutional Research. This data was based on the fall semester "1981-82" statistics.

Longitudinal Study

Procedure

The first mailing took place during the Spring of '81 from which we received 20 questionnaires out of two hundred and thirty-six mailings. This figure represented 8% of the subject population.

This office called all subjects prior to mailings in order to obtain verbal confirmation that they would complete the questionnaires and verify their addresses and phone numbers.

The second mailing took place during the summer of '81. We again telephoned the remaining 216 subjects to ascertain if they, in fact, had received the first questionnaire; and again received commitments from them to complete the survey. (We always confirmed addresses and telephone numbers.) Some of the subjects were scheduled to come into the office to complete the questionnaire because this was a convenient location for some of them.

The third mailing took place in March of '82. We again contacted the remaining 203 subjects to verify their addresses and phone numbers

and to get a verbal commitments from them.

Out of the ninety-four (94) black women contacted, twenty-nine (29) could not be reached or did not participate for the following reasons: (1) Not interested - 5, (2) Non-published telephone numbers - 3, (3) Disconnected telephone numbers - 5, (4) Army - 5, Left for Germany - 1, (5) Wrong number - 10, (6) Moved to Sicily - 1.

The total number of questionnaires mailed to black women was 66. Out of the seventy-eight black males contacted, thirty-six (36) could not be reached for the following reasons: (1) Navy - 4, (2) Disconnected - 9, (3) Wrong number - 6, (4) Air Force - 4, (5) Army - 6, (6) Non-published - 7. Thirty-six actual surveys mailed were forty-two . Out of the 36 white males contacted, twelve could not be reached for the following reasons: (1) Disconnected phone - 3, (2) Wrong number - 4, (3) Army - 1, (4) Non-published. Twelve actual surveys mailed were twenty-four. Out of twenty-eight white females, eight could not be reach for the following reasons: (1) Moved away-married - 3, (2) Private number - 4, (3) Wrong number - 1. Eight (8) actual surveys mailed were 20.

Fifty-five subjects responded out of a total of two hundred and thirty-six comprising the Longitudinal group. This return represented twenty-three percent of the population in this study.

The Longitudinal Group was distributed by race and sex as follows: black women science majors - 26 (47%); white women science majors - 6 (12%); black men science majors - 16 (31%); white men science majors - 6 (12%); race unknown - 1 (.01%). Responses in these groups were analyzed together

as some cell sizes, viz., white men and white women, were too small to allow validation of response significance. At a later date, the responses from black women will be analyzed separately.

Reliability Studies

Reliability studies were conducted to ensure consistency of coder's interpreting and coding the open-ended questions from the questionnaires. In order to make sure that the coding was reliable, we periodically checked for reliability by having two or more coders code the same questions from the questionnaires. We continued to do reliability checks. When we found less than 95% consistency, we revised our coding form to help coders in making decisions and how to code certain types of questions. For instance, actual examples were given under each coding category. Questionnaires were recoded by two coders until we reached a satisfactory level of reliability. Periodically we performed additional reliability checks to control for changes in the reliability of the coding over a period of time.

Whenever, low reliability items were found, those particular questions were pulled from each survey form and recoded under close supervision. As a result of this, the coding manual was usually retyped with more explicit directions and the computer runs were executed again. The coding manual was revised on a total of four times to ensure reliability. In addition, spot checks and corrections were made of all seven hundred and fifty-five questionnaires which greatly increased the reliability.

Reporting of Data

All tables appear in the appendices. A table heading "Listing of

Tables" contains headings which will make it possible to find and examine the data reported herein.

Data used wll meets minimal significance standards (Chi square or Pearson's coefficient). The SPSS Packet was used for most analysis. In general analysis, construction of indices and regression analysis, any data viewed as questionable (i.e. inadequate significance, low student response) were discarded.

SOCIOECONOMIC CHARACTERISTICS

The impact of socioeconomic variables on the development of children's career aspirations has been intensively studied to determine its significance. We have surveyed our respondents for several indicators which have been implicated in the development of career-salient students. Individuals were queried, e.g., on the educational level, social status, geographic origin and other factors which we felt would adequately characterize them as a cohesively distinct group, representative of an urban southern population.

High School Responses

The high school respondents had an average age of seventeen. None were in their twenties, none were below sixteen. This was the expected age range for the high school seniors surveyed. Eighty-four percent to 97% indicated that they had lived in the south most of their lives.

Employment of Parents

Sixty-four percent of the mothers and (45%) of the fathers of the black women science majors were employed in clerical/sales, or professional occupations. Most (41%) of the fathers of the black men were employed as craftsmen or operatives. Sixty percent of the fathers of the black

men were clerical/sales or professionally employed. The employment of the mothers was equivalent to that of the black high school women.

By contrast, the fathers of the white women were mainly professionals (78%) or clerical and sales (12%). Therefore, a total of 89% of these parents were employed in careers carrying more socioeconomic status. Employment trends among the mother were similar to those seen in other groups.

Educational Level of the Parents of the High School Cohorts

Thirty-four percent of the mothers and thirty-three percent of the fathers of the black women have received at least one year of college education. Fortythree percent of the mothers and forty-two percent of the fathers of the black men had attended at least one year of college.

Eleven percent and thirteen percent respectively had received advanced degrees. Again, there was a sharp difference in parental characteristics between the minority and majority students. Only two percent of the mothers of the white women had training beyond the college level (31% had college degrees). However, 34% of the fathers did hold advanced degrees.

Sixteen percent of the mothers and 37% of the fathers of the white men science majors had attained graduate degrees. The parents of the white men science majors were the "best educated" and this might partially account for some of the other characteristics (better grades, SAT scores, etc.) seen later in this study in this population.

Income of Parents

The highest income of any black mother reported was $24,001-30,000 (5.3%). Twenty-eight percent made $18,000 or above. By contrast, 31% of

the fathers made $18,000 or above. Eight percent of the mothers and 31% of the fathers of the black men had similar incomes.

Again, striking differences are noted: as 9% of the mothers and 97% of the fathers of the white women reported parental incomes higher than $18,000. Twenty-six percent of the mothers and 89% of the fathers of the white males were in the same category.

Perceived Social Class

In spite of the economic realities, 83% of the black high school women and 71% of the black high school men reported that they were in the middle-middle class status, or above. Ninety-five percent of the white high school women and 97% of the white high school men reported that they were of middle-middle class status or above.

Number of Siblings

The black women had an average of 1.4 brothers and 1.6 sisters. The white women had an average of 1.3 brothers and 1.2 sisters. The black men high school science majors had an average of 1.6 brothers and 1.7 sisters. The white men had an average of 1.0 brothers and 1.2 sisters. The size of the families, therefore, was relatively consistent and comparable for all groups and, therefore, does not introduce a distinctly different variable into the study.

Birth Orders

Culture and family patterns are the interactions most likely to influence birth order effects (Patterson & Tinsley, 1980). Most studies have focused on white middle class males (Forer, 1969) and the generalizations and extrapolations of the findings may, therefore, apply only to a limited group.

Research by (Boroson, 1970) tends to confirm that the goals of a child may be seriously impacted by the birth order of the child. First borns and later borns seem as if they are members of a dominant hierarchy, with first borns showing greater use of power tactics and later borns making more frequent use of forms of counteraction, including agression against these power tactics (Koch, 1955).

In studies reported on black college students, no significant differences were noted in terms of father's occupation, reported closeness to mother as opposed to father, perceived family economic class, or total family income to achievement (Patterson & Tinsley, 1980).

The Patterson and Tinsley study concluded that birth order effects were not seen among responses from lower economic class black students, but did not eliminate the possibility that they might be found from blacks of other socioeconomic classes. Also evident from the same study was reported career choices: First borns selected business and accounting most often, whereas second borns most often selected education.

We examined our population principally to determine the incidence of first borns. Data analysis revealed that 33% of the black women, 36% of the black men, 28% of the white women and 45% of the white men who indicated a science major were first borns. This compares with another subset, non-science majors in which we found that 20% of the black women non-science majors and 42% of the white women non-science majors were also first borns.

We are not in a position to comment the absolute significance, if any, of these findings. It is, however, of interest to note that white men who are more successful in science/technology careers are, in significant numbers in our study, first borns. Also, black women who voice science as a major are twice as likely to be first borns when compared to black women non-science majors.

We are unable to make any further comments on the significance of the birth order of the white high school women and black high school men. The study was not designed to study this variable. It is interesting, though perhaps not significant, that an average of 64% of the white men and women and 64% of the black men were either first or second born (as compared to 54% of the black women).

Academic Profile

High School Grade Point Average (GPA)

None of the black women indicated that they had an average of higher than B+. Only 3% of the white women and men, respectively, reported an average of A or A+.

In general, 45% of the black women reported an average of B and 29% reported an average of B+. Forty-three percent (43%) of the white women reported an average of B+ and 41% reported an average of B. Twenty-seven percent (27%) of the black women reported a high school GPA of C+ or less. While only 8% of the white women reported averages of C+. (None reported lower than C+ averages.)

By contrast, only 16% of the black men had a B+ average and 40% of this same cohort reported averages of B. Thirty-three percent (33%) reported averages of C+ and 9% reported averages of C or below. The

white men cohort reported 32% B+ averages, 39% B averages, 23% C+ averages and 3% C averages. These averages tend to confirm that the high school woman has higher grades than her male counterpart. Yet, if trends continue as usual, we will find more men succeeding in college. Other characteristics and societal pressures must be explored (see FOS, Role Models).

Only in the black population were high school seniors found with D averages who were still intended to major in science. The dynamics of the counselling situation must be further explored particularly when one also considers that while the black students voiced an intention to major in science in college only 45% of the women and 39% of the men were enrolled in a pre-college curriculum. In striking contrast, fully 83% of the white women and 71% of the white men were enrolled in pre-college curriculum tracts.

It is of no particular significance to note, but is of concern that of the non-science majors, only 27% of the black women were enrolled in pre-college tracts as compared with 67% of the white women. The overall conclusion which we are tempted to draw here is that black women are advised in <u>low</u> numbers, to enroll in pre-college curriculum tracts, regardless of their intended majors. This is a matter which should be of concern to all educators particularly in this region since it indicates that the pool of black women who are even given high school advisement to pursue courses to give them experiences commensurate with their college expectations is low. This finding implies that counsellors seem to exacerbate the dilemma of the black woman who must depend on them to set achievement standards. As our later findings indicate, many of these

women continue on to college anyway, with full parental support. Their high school experiences are still inadequate.

Therefore, regardless of intended career goal and perhaps ability to learn and perform, the southern black females in our study is not receiving adequate advice. She is therefore upon entry to college, less prepared, less competitive, more vulnerable, and more likely to have problems. She is, in effect, being programmed for failure by counsellors who do not take her goals seriously.

SAT Scores and Performance in Mathematics, English and Science Courses

SAT Scores

No black women reported SAT scores above 600 in mathematics. Only 2.3% reported receiving SAT scores of higher than 600 in verbal skills. (Only 37% of the total group knew their SAT scores.) By contrast, 27-29% of the white women reported SAT scores in math and verbal skills respectively of over 600 (Sixty-six percent of these students knew their SAT scores.)

Only 38% of the black males knew and reported their SAT scores. They than this same group in verbal skills. Overall, however, only 3-7% performed above 600 in math and verbal skills, respectively. Data for the white men cohort revealed that 38% received SAT scores of 600 or above in verbal areas. Sixty-three percent of this group knew their SAT scores.

The finding of lower SAT scores for the black students is not surprising. However, there is again a counselling concern since black students in few numbers knew their SAT scores. One can surmise that they either had not taken the exam, or had not been advised relative to the importance of these scores. Future item on a similar survey must

be "Have you been advised to take the SAT exam?" and "Have you taken the SAT or PSAT examination."

Mathematics Grades

In math classes, 10% of the black women and 30% of the white women reported mathematics averages of A or above. Forty-two percent of the black women reported averages of B or B+, while 40% reported averages of C or C+. A total of 5% reported averages of D or below. Fifty-one percent of the white women reported averages in the C or C+ ranges.

Neither group of men reported grades lower than C, though the black males reported averages in the C's twice as often as white males. The grades for the black men were, on the whole, higher than those reported by the black women. The grade distribution of white women vs. white men were substantially equivalent.

English Grades

White women overall had higher english grades than any other group. The performance of the black women in this category more closely approximated that seen in white men. The performance level of black men was concentrated at grade averages of B or below.

Science Grades

In science classses, the white women performed almost equivalently to the white men, and the black men performed in a pattern similar to that seen for black women. Both groups of women received higher grades in fact. However, total percentages for grades above the level of B were almost identical. It was also evident from the data gathered that both

groups of white students reported higher performance than those reported by the black students.

Feelings About Science

We also wanted to know how these students "felt" about English, Science and particularly Mathematics since this is so often the subject area which underwrites both ability to perform in a science career, and in which women feel less confident. The results indicate that both groups of high school women felt reasonably positive towards English (77%) and that more black men felt more positive (71%) than white men (62%). White men reported the most negative feelings (21% felt slightly to strongly negative). When questioned about feeling in mathematics the black women were equally as positive as the white women (72%), but a few respondents were more negative (11% black women vs. 8% white women). The groups of men here were equally positive (84%) but again, the black males also as a group reported more negative feelings (8% black men vs. 3.1% white men). In terms of the overall feelings towards science, again, the women share equivalent positive feelings (72%). The men were also similar (80% positive feeling), but, as the data indicates, were more positive.

The overall picture here seems to be one where the students all feel good about their subjects in spite of the fact that our research has shown that the positive feelings of the white students might be more realistically based (i.e. on academic performance rates) than are those seen among the black students. While the lower performance rates probably do not, taken alone, mitigate against a career in science, one wonders if the black students have been adequately counselled on just what their peers look like academically) and, therefore, the measures against which they will be

compared as they seek to advance their careers. The implications of advisementcounselling-exposure are strong in our opinion.

Expected Highest Degree

Seventy-two percent (72%) of the black women expected to receive a Master's Degree or above. Twenty percent planned to receive an M.D. degree, and 25% planned to receive a Ph.D. Twenty-two percent of the white women expected to receive an M.D. degree; another 10% expected a Ph.D. Fully 43% of the white women planned to terminate their education with a Master's Degree (as compared to 26% of the black women). The black men cohort indicated that 44% planned Master's degrees, 6% planned M.D. degrees and 22% planned to obtain a Ph.D. It is interesting to note that the degree expectations and aspirations of the black women are higher than those found for the black men (and white women). This is perhaps a critical finding, unless most of the black men were planning careers in engineering, where a lower terminal degree is normal. The educational expectations, if attained would not compare with those reported for the parents of the black cohorts since in no group did the mothers hold more degrees or advanced training than did the fathers. If all of these students were to succeed, 62% of the black women would receive degrees more advanced than those aspired to by their male counterpart.

The data on the white men indicated that they had similar plans to the white women with the exception that more of them planned to receive degrees above the master's level. It is clear that the black high school women and men planned higher degrees, overall than their white counterparts.

We are left at the point, again pondering the dynamics of counselling and advisement. These students know about a large number of careers and plan to pursue these. Yet, their academic traits are inappropriate. More work is needed.

Longitudinal Cohort

The members of the longitudinal cohort who responded to our survey (identical to the one they had completed in their senior year of high school), were all enrolled in undergraduate studies. Some (29%) had changed their major from science to a non-science area. (It is beyond the scope of this study to do individual case studies. However, in future independent research we will compare these individual high school responses to detect any significant characteristics in those who had changed their majors.)

Results

The average age of the longitudinal respondents was nineteen. Ninety-six percent still responded that they were from the South. Approximately 60% of the parents were employed in professional or clerical sales categories. Eighty-six percent of the mothers and 38% of the fathers had completed at least one year of college education. Eleven percent of the mothers and 14% of the fathers held a Master's degree, or above. Neither parent reportedly independently earned over $36,000/year, though seventeen percent perceived themselves as being of upper middle status or above. Forty-six percent indicated that they were of middle-middle class status. Thirty-three percent were first borns.

Forty percent of the respondents, in high school, had a B+ average or better average. Only 31% of the students retained a B average in college.

Therefore, it seems that the students were experiencing some academic difficulty. Fully 48% of the respondents reported SAT Math scores of 200-400 and 60% had verbal scores in this same range. Only 1.8% report Math or English averages of D or below. Science averages reported were all "C" or above.

Only 55% reported that they had been enrolled in a pre-college curriculum in high school. This factor alone may explain some of the changes in major, low SAT scores, and lowered overall GPA's. These individuals were committed at this point, however, and 75% planned to continue their education and receive a Master's degree, (40%) or above (M.D. or Ph.D.). Forty percent felt that nothing would interfere with their educational plans; fifty-three percent felt that any "threats" to their plans would have a non-intellectual basis. Only 3.8% felt that intellectual factors would threaten their plans. Therefore, as a whole, the individuals had faith in their own ability, in spite of perhaps less than adequate pre-college advisement and lower SAT scores than one might expect for a successful college career in science. Forty-five percent, however, did feel that external factors might interfere with their plans.

Here again, because many researchers have emphasized the relationship between grades and fears of subject matter. We queried these students on feeling towards English, Mathematics and Science. Fifty-eight percent were moderately to strongly positive towards mathematics. Nine percent or fewer reported any negative feelings in each subject matter.

Cross-Sectional Cohort

This cohort consisted of seniors of four undergraduate colleges in the Southern region. A women's college and a college in a rural setting

were included to insure wider diversity and, therefore, greater applicability of the findings. While we have analyzed the data for each individual college, we will here, for the most part, report only data for the group as a whole. (Results from individual school analyses will be presented in later publications.)

Demographic Data

The respondents were mainly from the South (64%) and were to a large degree (85%), 21 years of age, or older.

Seventy-eight percent of the mothers and 54% of the fathers were employed in the clerical/sales or professional category. The mothers were more often professionals (64% mothers vs. 47% fathers).

From the employment data it is not surprising to find that 23% of the mothers versus 13% of the fathers hold Master's degrees. Seven percent of the fathers were reported as holding other advanced degress. In addition, 24% of the mothers held a college degree only, as compared to seven percent of the fathers.

The earnings of the parents were as follows: Thirty-four percent of the mothers and 54% of the fathers earned $18,000, or above. An average of 25% of both groups were in the $18,000-24,000 income category.

When queried on the social status, 54% responded that they were middle-middle (36.5%) to upper-middle (17.5%) class. Only 9.5% reported that they were from the lower socioeconomic status, despite the fact that 42% of the mothers and 15% of the fathers reportedly had incomes of less than $12,000.

Thirty-three percent were first borns. This is exactly the same

percentage as observed in the black women high school cohort. They had an average of 2.0 brothers and 2.0 sisters.

Academic Profile

Nine percent of the respondents indicated that they had an A or A+ average; 65% had a B or B+ average while 23% had a C+ average. Sixty percent had been enrolled in a pre-college curriculum in high school.

SAT Scores

Only 6.0% reported SAT math scores of 600-800. The majority (47%) reported SAT scores of 200-400. The verbal scores were somewhat higher and 61% indicated scores in the 401-600 range. Mathematics grades were mainly (55%) in the C or C+ range. (Only 1.8% reported D averages in mathematics). This finding does give credence to the opinion of many that low SAT scores are not necessarily correlated with lack of ability to pursue science as a major. We should explore, possibly some other reasons for low test scores, i.e. lack of test sophistication, lower performance/exposure, or test bias). Only 5.5% reported an A average in mathematics whereas 19% reported an A average in English.

While these young women had persisted in science careers, fully 52% reported science averages of C or C+. Only 11% had A averages. This is also an interesting finding and a follow-up study is warranted to determine actual success in rate of placement of these young women in graduate or professional schools. The grade profile does not portend a high placement rate in some of the more competitive areas graduate/professional schools.

Feelings Toward English, Mathematics and Science

The majority (68%) of the respondents felt positively towards English

and Mathematics. Approximately 12% felt slightly negative towards Mathematics. There were no negative feelings reported for science, and 93% reported positive feelings for their major.

In summary, the "feelings" about these subject areas indicate overall, that in spite of a preponderance of C's, these young women still felt good about their chosen disciplines.

Educational Plans

Twenty-seven percent planned to obtain a Master's degree; 26% planned to obtain an M.D. and 44% expected to obtain a Ph.D. All others expected to terminate their education with a Master's degree.

III. PERSONAL GOALS/CAREER GOALS/FAMILY EXPECTATIONS AND SUPPORT

High School Cohort

The preceding section indicates that substantial numbers of these young people had high aspirations for completing advanced training. We, therefore, wished to determine how realistic their plans were for utilizing the advanced training, i.e. did the students really have clearly defined career objectives which they consistently planned to implement.

Results

The respondents were queried about their plans for the next decade. Twenty-nine percent of the black high school women and 49% of the black men planned to be involved in career-oriented activities only. Approximately 40% of both the white men and women science majors would be involved in career activities only. Virtually none (0.9% or less) of the black high school women and white high school men expected to be only involved in marriage and family. The black women were most hopeful (70%) of combining career and marriage in the upcoming decade. There were at least fifteen percentage points separating them from the group with the next highest response here (white high school men = 57%). One wonders at this point whether these young women had informed ideas on just what was involved (i.e. time) in the fulfillment of their educational and subsequent career plans. This finding, nevertheless, does confirm other reports (Mednick & Puryear, 1975) that black women, unlike their counterparts, tend to see working, rearing children, performing a wifely role (and, we might add going to school) as compatible.

Family Plans

Seven percent of the black high school women already had one child.

No other group reported children in significant numbers. In general, most of the high school respondents (45-51%) wanted two children. Interestingly, but confirming the observed decrease in fertility of upwardly mobile black women, 18% of the respondents wanted one or no children. White men, again, ranked second to the black high school women and 14% wanted no or one child. Also of interest was the fact that the white high school women and the black high school men both (41%) reported wanting three or more children. One can see a building dilemma if, in fact, it is these groups of budding professionals (all four cohorts) that represent essentially the eligible partners for each other. There is apparently a serious dichotomy between white men/white women and black men/black women over numbers of children desired. This finding certainly has stress implications for both groups if traditional marriage patterns persist.

There were no serious difficulties in the age when childbearing was anticipated; most expected to begin their children at or after age 23. At least half of the black women (51%) planned to return to work 0-6 months after their child was born. By contrast, 55% of the white high school women planned to wait twelve months or more before returning to work. Though they were not questioned, one black male and one white male indicated that they would take some time off after the birth of their child.

Career Plans

Almost all of the respondents planned to marry eventually and most were presently dating someone regularly who planned a professional career. The black and white women similarly (66%) expected to work 40 or more years. Seventy-seven percent of the white males and 51% of the black males had similar expectations.

Fifty-four percent of the black women and 72% of the white women planned to work principally for self-satisfaction. At this point, while both groups of men indicated that they would work for self-satisfaction, comparatively more (10-20% more than the women respondents) responded that they would work principally for money.

Almost all in large numbers (92%+) indicated that they would continue to work with children, but the white women only remained most constant in their reason for working, i.e. self-satisfaction. Now, with children, only 36% of the black women would work principally for self-satisfaction. Here, both groups of men (87%+) responded that they would work for money. Consistently, only one white male consistently indicated that regardless of all, he would work for fame. Only three women (2 black/1 white) ever indicated that they would work for fame. None of the black males ever stated that fame was their reason for working.

Certainly the most interesting finding here was that the black women seemed to feel a definite need to make money and contribute income to take care of their families. By and large, the white women did not seem to feel that their salaries would be needed to make their families secure. It is notable here, also that this shift observed above (i.e. self-satisfaction to money) was not seen for the black college seniors (see Cross-sectional analysis, this section).

The black women and men both expected (65%) to work 5-8 hours/day. The white men expected to work the longest hours (44% @ 9-12 hours/day). It is interesting to note here that high school students pursuing non-science careers mainly (79-84%) expected to work 8 hours/day or less. Finally, when queried on hours spent on home, family and recreation, 50%

or more planned to spend 9 or more hours/week in these activities.

The high school groups were queried on what their percentage of home chores would be if they married a professional. Forty-nine (49) percent of the black men and 60-65% of the other groups felt that they should assume 50% of the home chores. However, less than half of the women felt that they would achieve their ideal in terms of chores. Both groups of men felt that they would actually assume fewer chores than they ideally felt they should assume. It is intriguing to consider and investigate why the men felt that they would, in reality, assume fewer chores then they felt they should assume.

Support of Family for Career Success

Both groups of black students reported moderate to strong support from their mothers (at 90%). This finding is in contrast to that reported by Kelley & Wingrove (1975) who indicated that black mothers had higher aspirations for their daughters. Black fathers also were seen as being equally supportive, but to a lesser degree (80-83%). This finding (of less support from fathers) is in agreement with the Kelley & Wingrove study. The white students reported similar degrees (at 80%) support (moderate to strongly positive) from both mothers and fathers. These findings tend to continue to substantiate the reported stronger role of the black woman in setting the tone for the career plans of her children (Patterson & Tinsley, 1980).

Finally, when asked about success expectations of significant persons, 94% of the black women, 98% of the white women, and all the men expected to be successful. Fully 95%+ of all mothers expected their children to be successful. There was more diversity reported in expectations of fathers and 93% of the black men as compared with 98% of the black women reported

that their fathers expected them to be successful. Ninety-six percent of the fathers of the white men and women expected their sons and daughters to be successful. It is clear that the black women experience more support their fathers. However, the added degree of support is small and, therefore, the impact or significance of this finding, if any, is unclear.

Longitudinal Cohort

Career Plans

During the next decade 53% planned to be involved in career and marriage-related activities. Twelve percent of this group reported that they would be mainly involved with their marriage and family. (These might possibly be the non-science majors.) A full 30% expected to be involved with career-oriented activities only.

Family Plans

Only 4% wanted no children and forty percent (the largest category) wanted two children. Another forty-three percent wanted three or more children, and 91 percent planned to start their families at age 23 or older. Fifty-two percent of this cohort felt that they would take off two to six months after the birth of any children. All of these students wanted to marry eventually and ninety percent were regularly dating persons who had expectations for a professional career. These individuals reported that 33% of their dates planned to receive a Master's Degree, or above.

Career Plans

Sixty percent of this group expected to work forty or more years principally for self-satisfaction (51%). If they planned children, 60

percent said they would work for money and only 38% would still be working for self-satisfaction only. Two percent of the longitudinal group consistently indicated that they would work principally for fame. Ninety-eight percent felt that they would work 8-12 hours per day and 47% would devote 13 or more hours per week to home, family and recreation. When asked about their percentage of home chores, 64% felt that they should be responsible for fifty percent of the home chores. Ninety-eight percent expected themselves to be successful. Their parents also reportedly expected success (mothers=100%; fathers-98%). Ninety-one percent of the mothers and 82% of the fathers strongly supported the career plans of their children.

Cross-Sectional Cohort

Family and Career Goals

During the next decade, these young women planned to be principally involved in career and marriage (81%). The other 19% planned career-oriented activities only. Fully 95% planned to marry eventually and many (44%) wanted two children. None planned to begin their families before 23 years of age; and most (80%) would take 6-12 months or less off between the birth of their children and a return to work. Most of these respondents (as well as all other groups) planned to marry a professional person who would obtain at least a Master's Degree.

These young women (84%) planned to work thirty or more years and indicated that they would work principally for self-satisfaction (71%), even if they have children. With the responsibility of children, however, 36% indicated that they would work principally for money. Interestingly, in this and in all cohorts in general, while it was observed that

self-satisfaction was the principal reason for working when there were no children, when children were added, the percentages shifted and more now indicated that they would work principally for money. Also, none ever indicated that they would ever work for fame alone.

The majority (64%) felt that they would work 5-8 hours/day and would spend 9 or more hours/week on home, family and recreation. This trend was comparable to that seen in the longitudinal group.

There were strong feelings about the percentage involvement in home chores if they and their spouse were working. Fully 68% felt that there should be even sharing of home chores. However, only 47% felt that they would actually experience this degree of sharing, and 37% felt they would assume 51-100% of all home chores. Therefore, while these young women realized that they wanted and needed more help to effect their roles of career person/mother/wife, many realized that they would still have to carry all responsibilities without the full support of their mate. This same trend (towards reality perhaps) was seen in the longitudinal group, which was principally composed of black women.

The findings in all cohorts confirm very early research which indicates that gender roles behavior within the family has undergone limited change and while some men take on more active home responsibilities, women have been able to combine work and family roles by adding their employment responsibilities into their family obligation (Holmstrom, 1973; Walker, 1970). Apparently little has changed over the past ten years, since the young women still feel that they must carry on as their mothers did.

Career Support and Expectation for Success

Ninety-one percent of the college seniors reported receiving moderate to strong career support from their mothers. Only 76% of the fathers supported their daughters to the same degree (Significant differences in degree of father's support were noted between the college groups. We will address these differences in later publications.)

However, when queried on the success expectations of their parents, 99% of the mothers and 95% of the fathers expected that their children would be successful. And, most importantly, 99% of all the young women expected that they would achieve career success. The resounding self-confidence was reassuring to us as we continued to view academic and social challenges which these women were encountering or would fact at a later date. It is interesting and significant perhaps also that while their fathers were not as strong as their mothers in support for their careers, they did have faith that their daughter would achieve success. Here, the family fabric seems to be strong and to provide a support framework against which these women could develop careers.

Summary-All Cohorts

The black women science majors had the lowest overall self-expectations for success (94%). In all other groups, success expectations were 98% or above. Both groups of men were 100% certain that they would succeed. In addition, virtually all the mothers (95%+) expected success. Father expectations for success were lowest for black high school men where analysis revealed that only 93% of the fathers were confident that their sons would succeed. All other groups reported 95% or above expectations of success by the father. The black high school women reported that 98%

of their fathers expected them to succeed.

It is notable here that in spite of the present research which indicates that large proportions of women who engage in non-traditional professions remain single (Yohalem, 1979; Simon, Clark & Galway, 1975), virtually all of the students surveyed planned to successfully combine career and marriage. We can only wonder whether these plans will be successfully implemented.

In summary, all groups had high education and familial expectations and anticipated that they would succeed. Other than academic variability, no really significant indices were detected which could be used as predictors of success or persistence. We shall return to variable identification under our discussion of Internal/External and Behavioral Characteristics.

IV. INTERNAL AND EXTERNAL CONTROL OF CAREER DEVELOPMENT

Rotter (1966) developed the Social Reaction Inventory (SRI) to distinguish persons who believe that their personally controllable actions determine the outcomes they experience (a sense of internal control) from persons who perceive that these outcomes are determined by situational factors such as luck, destiny, or the control of powerful others (a belief in external control). Rotter (1966) hypothesized that the internals would achieve more than the externals because the internals believed that they could control the reinforcements needed to insure success.

Coleman et. al. (1966) reported that whites were more internal than blacks. There was a positive correlation in studies among southern black college students of a sense of personal control and college grades and standard test scores, and a negative correlation between hard work, persistence and talent and academic performance (Gurin, et al, 1969). The sense of personal control predicted achievement. Reportedly, students who believe that their controllable actions determine their goal attainment achieve more (Jorgenson, 1976).

There is, however, no clear research on why black women achieve or fail to do so. It is clear that they apparently suffer fewer role and internal conflicts in this area. However, internal or external factors intrinsic to motivation are not yet identified.

We sampled our population to determine the major locus of control. The findings are presented as follows:

<u>High School Respondents</u>

The students were asked whether intellectual or non-intellectual

factors were more important in school. The black women and men equally (92%) felt that internal abilities were more helpful in school. The white men reported the highest internal control (98%) while the white women were slightly lower (87%) than all groups. Interestingly both the black women science and non-science majors in a very low percentage (1.0%) mentioned religion as being helpful in school. No other group mentioned religion. White women felt to a much higher degree that external abilities were helpful in school. (The white women non-science majors reported a similar degree of external and internal control.)

Both groups of women reported intellect was important 35% of the time; 50% of all of the men reported that their intellect was important. Very few (5% or less) felt that lack of intellect would threaten their educational plans, and only the white men to a very significant degree (48%) felt that external factors would threaten their external plans. The white women to the largest degree felt that internal variables would threaten their plans. Only limited numbers of the other groups (12%) felt that internal variables would threaten their success. No matter how the question was asked, the potential white men scientist always assigned a greater (then the other groups) degree of value to threat from external factors.

Career Helpful Traits

These students (90%) felt overall that internal traits were more helpful (90%+). The black men and women assigned relatively more value to intellect as a career helpful trait.

The black women, when questioned on specific variables, ranked knowledge and intelligence first most often as being equally important in helping them reach their career goals. Interestingly, they ranked "hard

work" lower than any of the other cohorts who all ranked hard work first most often. There seems to be some separation from fact here; or, were the black women more idealistic and assumed that if they had intellect and knowledge, the rest would naturally occur. This we feel is a significant finding.

Factors seen as least important were charm, personal attractiveness and good luck (ranked lowest by all groups in spite of the weight they put on this trait when asked about combinations of ability and luck in their academic efforts).

The rank ordering of career helpful traits has not yet revealed any other striking differences. Other than the consistent finding that the black high school women valued intellect more often than all other groups and saw hard work as less important, the results for all other groups were comparable.

Our findings do contradict those of Coleman et al (1966) as we find that for the high school cohort, the white men were least internal of all groups. We are unable to evaluate other research reports at this time. Our longitudinal studies may ultimately yield more definitive information.

Longitudinal Group

Abilities and Career Helpful Traits

When questioned about factors which had helped them in school, 96% responded that internal factors were helpful, and 57% also felt that intellectual factors were most significant. The other internal factors which were helpful were cited as being non-intellectual (35%).

Internal factors such as hard work and intelligence were seen as being

their most useful characteristics. Having a supportive mate, good luck, social contacts, charm and personal attractiveness were seen as least important. Good luck was of interest again because 76% had earlier reported their success was due to a combination of intellect and luck.

Fifty-three (53%) felt that non-intellectual factors would threaten their plans. Only 11% felt that internal factors would threaten their educational plans. Most (57%) felt that intellectual factors were career helpful traits and 94% felt that internal factors were most helpful. This was a consistent finding when compared to the black high school students.

Cross-Sectional Results

Fifty percent of these individuals felt that non-intellectual factors would threaten their educational plans. Thirty-eight percent indicated that the non-intellectual factors were external. Forty-four percent overall felt that nothing would threaten their plans.

Eighty-nine percent felt that internal factors were career helpful traits but they were evenly divided over whether intellectual or non-intellectual factors were most helpful.

Intelligence, hard work and knowledge were ranked as most important. Least important characteristics were good luck, charm and personal attractiveness. Good luck was least important and a resounding 68% felt this was least important. Interestingly, none of the students at one college listed good luck any higher than eighth. Also of interest is the fact that the students at the women's college ranked charm as significantly more important. (Twenty-seven percent ranked this variable fourth important of higher.)

SUMMARY

The black women science majors more consistently ranked hard work as less important than intelligence, but all felt a strong degree of personal control over their careers. Black women in all cohorts felt that intellect was more important than other internal factors in assuring them success in school and their subsequent careers.

V. BEHAVIORAL CHARACTERISTICS

The incidence of Fear of Success, the Imposter Syndrome and the variables surrounding role models and achievement motivation were analyzed both from questionnaire responses, development of indices describing the cohort and regression analysis to determine which variances contributed significantly to the development of each index.

The analysis of questionnaire responses principally involved the black women and white women only. In some cases data is presented on the men cohorts. However, while we did collect and computerize all variable responses from the male cohorts, it was beyond the scope of the present study to project profiles on all males responses. Some comparisons are noted in the section on Indices and Regression Analysis. Further analyses will be computed at a later date and submitted for publication. (It should be noted that data sometimes varies from that for the whole cohort to that presented under individual categories, e.g. Imposter vs. Role Model. This is because since not all women responded to all items, we automatically discarded those who did not complete all essential questions. Therefore, the percent figure will occasionally vary.

Fear of Success

Overview

Studies on black male and female graduate students did not indicate any evidence of success avoidance. This same study did note that in that population, FOS in females was associated with striving to develop career interests compatible with their strong commitment to home and husband, while among similarly motivated males, the pragmatic career orientation observed was attributed to compensatory motivational dynamics (Fleming, 1982).

Weston and Mednick (1970), and Mednick and Puryear (1975) all reported lower levels of FOS imagery in black women than had been reported for white women. In contrast, Lavach and Lanier (1975) found no race differences in relatively high achieving adolescent girls, while Mednick and Puryear (1975) found no race differences in the very low levels of negative imagery expressed by both black and white college women. A marginal association has been made between lower grade point averages and reluctance to work after marriage except for additional income. Correlative and perhaps related data from Mednick and Puryear (1975) indicated that black college women often associated career success with marital conflicts.

The career expectations of the young women in this study will add further data to this growing area and perhaps allow the development of meaningful intervention strategies as they relate to defusing the proposed potential for conflict in personal areas. Items in the battery used to determine any incidence of FOS in this population included questions such as, "Would you be most likely to speak up before a group of men, women or equal number of men and women?" "Will you be more attractive to the opposite sex after you have achieved career success?"; "Would you mind if a woman's salary is higher?", among others.

Black High School Women Science Majors-Fear of Success

Ninety of the one-hundred nineteen subjects responded to every question designed to determine the existence of "Fear of Success" (Horner, 1968) in this population.

Black High School Women - Findings

In general, 64% of this group did not exhibit any fear of success when their responses were coded for this item. Thirty-four percent received scores indicating limited degrees of fear of success (see Indices, next section). None of the respondents received scores indicating moderate or high levels of fear of success. When queried on items which could be used to determine whether or not fear of success was a viable mode here, 82% of the responses indicated that the respondents did not fear success. The young women as a group did not exhibit any inhibitions (they thought) in speaking up before men and women (though only 4.4% felt that they would speak up before a group of mostly men; 82% would speak up before a group of equal numbers of men and women). When they evaluated their attrativeness", fully 64% felt that they would be more attractive to men after they achieved their career. The most important, or perhaps hopeful observation here is that only 2% felt that they would be less attractive to the opposite sex if they received advanced degress (and, therefore, careers, in the science areas).

Respondents were also queried on the important matter of salary. Only 14% of the respondents indicated that they minded if their salary was higher than that of their projected husband, but further analysis showed that as many as 20% had difficulty with a higher salary bracket. This appeared to be the only area where this one might predictably expect this group of women to experience difficulty in their careers. Because equal pay for equal work is yet not a reality in academic and other areas of the work force, a woman might experience trauma particularly if not only she, but her mate as well, have difficulty with her higher earnings.

In related items, it was determined that the parents of the young women responding to these items were often likely to be divorced or separated (66%), and most (60%) spent the majority of their time with their mother. The young women reported their social status as middle-middle class (59%). Average incomes were reported to be between $18,000 - 24,000. Interestingly, of this group, the mother's income was reported to be higher in most cases. (28% of the mothers made over $18,000, as compared to 21% of the fathers.) One wonders if the salary dilemma here was not reflected in response to fear of success responses on the salary items.

Aside from the above, however, these salary figures and stated social class indicate that the respondents have an unrealistic view of salary and social status in the United States. Also, proportionately, fear of success response types (32%) appeared among the women who had declared themselves to be middle-middle class, though 42% of the respondents in the upper-middle class gave "fear" responses with one (the only one appearing) showing "moderate" fear of success.

Interestingly, while birth order may not be significant to the study in any way, 68% of all those with "no-fear were first borns. Regardless of birth order, fully 63% gave consistent responses indicating that they had no fear of success.

White Women Science Majors: Fear of Success

The white women high school science majors exhibited more of a tendency towards fear of success on our scale. Of the total cohort, generally fifty percent of the responses indicated no fear of success. Ten percent consistently indicated a moderate degree of fear of success. The others all indicated "limited" amount of fear of success. Their responses were

statistically significant from those of the black women science majors.

Yet, overall, when questioned directly with situations which would indicate whether or not they feared success, 88% responded that they did not. No matter how many ways the questions were reworded, a consistent 4% always demonstrated a "fear of success". Even here, however, internal coding revealed the same degrees of fear of success operating in the population.

These subjects responded to the same battery of survey items. When queried as to which group they would be more likely to speak up before, only 2% indicated that they would speak of before mostly men, while 32% felt they would be more likely to speak before a group of mostly women. The remainder (66%) felt that they would be more likely to speak up before a group composed of equal numbers of men and women.

When queried on career and attractiveness, 61% felt that they would be more attractive to the opposite sex. The responses and percentages of those with "no fear" remained constant here, too.

This cohort of women were more mindful of salary and 20% indicated that they did mind if their salary was higher than that of their mate. In an open-ended question, 22% of the responses indicated a fear of success. This consistent 20-23% was consistent within the population during direct frequency analysis and as a result of cross-tabulations of responses with a scale constructed to indicate varying degrees of fear of success. It is interesting and perhaps significant to indicate here that 30% of the mothers of these women did not work at all.

Forty percent of the parents of these young women were separated

or divorced and 53% spent most of their time with their mother. Seventy-five percent reported their social status to be upper-middle class. It was not possible to draw any conclusions about respondents of different social class and the existence of fear of success, as answers were dispersed and not apparently class-related.

Longitudinal Group - Findings

These young women reported that they were most likely (75%) to speak up before a crowd of equal numbers of men and women. They also felt that they would be slightly to much more attractive (46%) after they attained their career goal. Refreshingly, 44% felt that they would be "just as attractive" after they achieved their career goal. Only 9% felt they would be slightly to much less attractive, (23% felt they would be moderately to much less attractive). Internal standards indicated that 86% overall, gave responses to a direct question, (you have just received and "A" and will get public award at a dance....) which indicated that they did not fear success. We also inquired for responses to salary and marriage/career conflicts. Twenty percent indicated that they would mind if the woman's salary was higher but only 14% of these responses could be related to the FOS theory. In addition, when queried on their plans of the future mate's job was out of state, 37% gave no FOS responses.

In general, the responses here indicated that FOS is not a variable of overriding significance since analysis of the individual items revealed that 14% or less answered in a way so as to indicate FOS. (The item with the highest FOS response was that which related to the matter of a woman's salary.) One must recall, however, that this is a mixed group of men and

women (see Methodology for percent composition). Therefore these responses can be related to a group of southern students only and not to black women adolescents. However, there is reasonably good correlation of responses (i.e. percent) between this and the other black female populations being studied.

Thirty-four percent of these individuals were first borns. Seventy-one percent gave responses not related to fear of success when their overall responses were compared to the FOS index. Ninety-eight percent of the subjects expected to be successful. Only 16% felt any apprehensions about receiving public recognition for achievements. When all responses were categorized, only 6% of the individuals could be described as exhibiting fear of success. When responses to the question on threats to their educational plans were analyzed, only 4% gave responses compatible with FOS imagery.

Cross-Sectionals-Fear of Success Analysis

Seventy-nine percent of these individuals indicated that they would be most likely to speak up before a group of equal numbers of women and men. (Interestingly, here, none of the respondents from the women's college indicated that they would be most likely to speak up before a group of mostly men).

After they achieved their career goal, they generally felt that they would be more attractive (44%) to the opposite sex. Again, though, as in the longitudinal group, many (42%) felt that they would be just as attractive. This latter finding is in sharp contrast to the black high school women where 63% felt that they would be more attractive after they achieved their career (33% felt that they would be just as attractive).

Eighty-eight percent of the responses here could be related to no FOS imagery.

Anomalous findings now appeared as fully 50% gave FOS responses when asked what might threaten their educational plans, even though 98% expected to be successful. Further analysis is warranted here as much of the total response was contributed by one college. Forty-two percent of this cohort indicated that they would mind if the woman's salary was higher, and 40% of the responses could be related to FOS imagery. Finally, when asked of their plans if their mate's job was outside of the state, 34% gave responses which could be related to FOS imagery. This latter finding was comparable to that seen for all other groups surveyed.

The responses from the college seniors to the FOS battery were not expected. Again, most of the FOS responses were generated at one of the four colleges. (Two of the colleges generated no FOS responses.) Therefore, we must perform analysis of other variables to determine any distinctive characteristics of the young women who completed the survey at that college.

As the results presently appear, a dramatically increased incidence of FOS exists among the cohort as a whole. It is notable that most of the women from the particular college which generated FOS data were social science majors. Fleming (1982) has reported a distinct correlation between FOS in female graduate students and having an undergraduate major in social science. We also would like to analyze more completely our socioeconomic data before we make further comments on this finding. Such an analysis was beyond the scope of this study.

The Imposter Syndrome

Overview

Women tend to attribute their success to luck, and their failure to lack of ability. Deaux (1976) has indicated that women more often than men, underrate their ability to perform tasks successfully. Men relate failure to luck or a complicated, difficult task. Not surprisingly, women particularly when they encounter and internalize sex-role expectations from society, "assume" that they are not competent for a number of tasks, (Broverman, Vogel, Broverman, Clarkson and Rosenkrantz, 1972) particularly given the cultural stereotype that males are more intelligent, achieving and competitive than females. According to Clance and Imes (1978), the women suffering from the above tend to explain their success by insisting that they are fooling other people.

Women who exhibit this Imposter Syndrome have similar family histories. They either have a close sibling or relative who has been designated as the "intelligent" member of the family; or, she has beeen "told" that she is the "sensitive" or socially adept one in the family. The woman in the first setting strives to prove that her family was wrong. The woman with the second family history experiences difficulty in the real world, but strives to hide this from her family, since they have told her that she was essentially perfect, and capable of achieving anything.

Clance and Imes do not support totally the effect of sex-role stereotyping on the development of imposter, though they do concede that the differential attribution of success and failure by girls and boys is already operative by the age of ten (Nicholls, 1975). The fact that these women persist, according to Clance and Imes implies early instillation

of achievement motivation by the family, and this serves to mitigate the impact of sex-role expectations encountered in society, even at age ten. Imposters reportedly maintain their behavior by diligence and hard work, failure to articulate personal and professional opinions over those of peers and superiors, and by avoiding success.

Findings

Several questions were designed to elicit responses which would indicate whether or not these students were suffering to any degree from the imposter syndrome. Questions asked included, "How bright are you relative to the same sex, the opposite sex?", "How much harder will you have to work relative to those of some major, same GPA", etc. "These individuals were also queried with respect to threats to their educational plans, career helpful traits, the degree to which good luck had contributed to their success, and the rating of their intellect by mother, father and teacher." The total responses were summarized and graphs depicting the incidence of "imposters" appears in the following section. Reponses were also analyzed of significant response differences between categories and ethnic subsets.

Black Women Science Majors-High School

The theory of Clance and Imes (1978) was investigated to determine whether the women under study demonstrated any symptoms of this syndrome. The original study by Clance had focused on middle class, career-salient working science women.

When questioned on their anticipated success and whether it was due to luck or skills, only thirteen percent responded that their luck was due to ability alone. Sixty-one percent felt that their luck was due three-quarters to ability and one-quarter to good luck. When

questioned on their rating of intelligence, 51% felt that their intellect was occasionally overrated by their teachers. Twenty-six percent felt that their intellect was "often" or "almost always" overrated. Twenty-nine percent felt that their intellect was overrated (often or almost always) by their mother. Thirty-three percent felt their intellect was occasionally overrated by their father and only 18% felt that they were "almost never" overrated by their fathers. Here 50% felt that their fathers occasionally overrated their intellect. The same cohorts who responded to "Imposter" battery of questions felt that they (26%) performed in tests below their norms.

The cohorts were also asked questions which compared their perceptions of their brightness as compared with women and men peers, and as compared with those having the same major. Responses were tabulated for degree to which respondents exhibited the Imposter Syndrome. Data indicated that the women felt that they were brighter than men peers (to a higher degree than as compared with women peers). Forty-nine percent felt that they were "just as bright as" peers with the same major. Forty-six percent felt that they were brighter than this same group. Interestingly, while the women felt they were brighter than their men cohorts (87%), they overwhelmingly (88%) felt that they would have to work harder than their men peers to succeed. Also of interest is the fact that they were reasonable competitive with women peers as sixty-eight percent felt that they would have to work harder than these peers, even though they felt they were just as bright s these peers were.

Analysis of whether or not any "Imposters" existed in the population studied indicated that 67% of the population consistently had strong

self-confidence and did not feel that they were overrated by peers or others. This finding is consistent with that obtained when the students were asked to indicate whether they were overrated by parents or teachers. The previous finding is also notable, however, because even though they did not feel they were "imposters" (i.e. overrated), they still felt that they would have to work much harder than men peers. This raised the interesting possibility that they are perhaps consistently underrated by peers, teachers and meaningful others. We shall explore this topic further in subsequent data analysis. It is of interest that only 5% of the students indicated that "intellect" would stand in the way of achieving her career goal, and these did not give intellect highest priority as a roadblock to success. Fifty-eight percent felt that nothing would stand in their way as they pursued a career. Only 4% of this group, however, gave responses which could be "interpreted" as imposter statements.

Generally, 4% of the population gave either neutral answers or gave responses which indicated that they distrusted their intellect or were unable to be specific in terms of what might impact their success. Their responses were often in the "same as" or "no" or "nothing" category.

The distribution of these women along a scale to indicate degree of existence of the Imposter Syndrome showed clustering towards the mean (median). Six categories or degrees of Imposters appeared here. The spatial distribution implies perhaps inadequacy of the questionnaire in this area, in that items being asked were meaningful but not necessarily appropriate to generation of data on the existence of Imposters in this population. We suspect that the Imposter Syndrome addresses commonplace

items which respondents realistically face and to which they respond. Clance and Imes did not attempt to quantitate their observation. Nor have they offered, to our knowledge, further substantiating data. We are unable to support their theory given our quantitative method and populations. (see "Development of Indices" for cohort comparison).

White Women Science Majors-Imposter Phenomenon

Twenty-nine percent felt that they were occasionally overrated by their teachers. (This is dramatically higher than figures reported for black women.) On a related item, forty-four percent felt that their most useful career trait was intellectually based, and only five percent felt that their success was due totally (100%) to abilities. Seventy-seven percent of the respondents indicated that their success was due to three-quarters ability, one-quarter luck. This is an interesting, though unexplainable response. If the young women are unwilling to credit themselves (i.e. their ability) for their success, one wonders how "fragile" they are when others question their ability.

Family support and belief in the child is an important indicator also of predicted persistence and success. Forty-one percent felt that their mothers almost never overrated intellect. Forty-eight percent felt that their mothers occasionally overrated their ability. Only 5% felt that their mothers "almost always" overrated their ability.

When questioned about their fathers' rating of their ability, 40% responded "almost never", 30% responded "occasionaly", and 23% responded "often". One wonders here, why they felt teachers so often are indicated as giving the students credit for too much intellectual ability.

The white women respondents, again, received the same survey items in attempts to determine existence of any "Imposters" in their population. Overall, a well-shaped distribution of the population was obtained when the respondents were tabulated. Here, only five "degrees" of imposters were noted, whereas in the black women, six categories ("degrees") appeared. A consistent 19% percent exhibited a moderate degree of the imposter syndrome. The remainder all showed limited amounts of this syndrome. Significantly, no student registered zero, i.e. no imposter concern. We might again conclude that our instrument was not as sensitive as perhaps was needed; or we could also infer, perhaps, that what has been developed as a syndrome may be no more than a realization on the part of the women studied that ego notwithstanding, there is more to career success than your own opinion of your ability, and, your actual ability. Presently, we subscribe to the latter. At any rate, the responses to the "Imposter" battery were interesting, and similar in many respects to those obtained among black women.

On the matter of "brightness", fully 78% percent felt that they were brighter than the same sex and the opposite sex. None of these women felt themselves to be "less bright than" the same sex, and only five percent felt that they were "less bright than" the opposite sex. Fifty percent, however, felt that they were just as bright as those with the same major and grade point average.

On the related issue of how hard they had to work on academics, sixty-four percent felt that they had to work harder than the opposite sex (31% felt they had to work just as hard as the opposite sex). This is interesting since 28% percent felt they were brighter than their male

counterparts. Did they, too, feel that teachers were giving more attention and unearned 'credit" to the men in the classroom? Only forty-four percent felt they had to work harder than the same sex. On a similar item, forty percent felt that they were able to invest "more time" than those of the same major, regardless of the sex of the others. These results did vary significantly from those obtained from the black women who, as a rule, feel they had to work much harder than anyone.

ANALYSIS - IMPOSTER VARIABLE

Longitudinal (College Freshman) Subset

Seventy-three percent of this group felt that they were brighter than those of the same sex and 67% felt that they were brighter than the opposite sex. Fifty-seven percent felt that they were just as bright as those of the same major and GPA (37% felt they were brighter than this same group). Again, interestingly, while they felt they were slightly much brighter than the opposite sex, 73% felt they would have to work harder than the opposite sex. (Thirty-three percent felt they would have to work harder than those of the same sex.) This variable can perhaps be directly correlated to the finding that 71% felt that their intellect was occasionally too often overrated by their teachers. The families were not as often guilty of overrating intellect, viz., mothers and fathers overrated ability 45% of the time.

This perhaps correlates somewhat with the feeling that intellect was more important than non-intellect to 60% of the respondents as a career helpful trait. Fifty-seven percent felt that non-intellectual factors might interfere with their career plans. A healthy 35% felt

that nothing would interfere with their career plans.

Cross-Sectional-Imposter Phenomenon

The students responding were by their own report, principally from the middle class. Most felt that non-intellectual internal factors accounted for their success. Seventy-nine percent felt that they were brighter than members of the same sex and 74% felt that they were brighter than members of the opposite sex. Only 56% reported being brighter than those of the same major and grade point average. Despite the fact that they felt they were much brighter than their male peers, 79% felt that they would have to spend more time and effort than the men. Only 39% felt that they would have to expend more time and effort than peers of the same major and GPA.

Of the individuals responding to the questions of the imposter syndrome, only 2% felt that non-intellectual factors would threaten their educational plans. These findings indicate that this population essentially has no imposters in it since the respondents have a positive attitude about their abilities and continually affirm faith in their intellect.

SUMMARY

In summary, the item of greatest concern is the constant report (from all groups) that they felt they would have to work much harder than their male peers. This finding implies that teacher dynamics are not perhaps all that they should be, or that the young women are intimidated by their male counterparts. More investigation is warranted. Because these young women and men overall simply seem anxious to please and excel, we feel that they are psychologically healthy and are simply freer in their

willingness to admit to the reality of the competitiveness involved if one wishes to excel. That they are anxious to please and anxious to excel actually may indicate that they, at least at this age, retain qualities that are, in fact, desirable. They might be in fact more perceptive, and sensitive leaders.

ROLE MODELS

High School Respondents-Role Model Analysis

The black high school women most often mentioned a female, parent or guardian who was involved in a non-science career. The most admired person was also a female, non-science health person with whom they had good relations.

Black men reported that a female parent or guardian (60%), non-science/health person was most important. The most admired person was a male, non-science/health person with whom they had good relations.

The white women reported that as often as not, the most influential person was a female parent or guardian who was, as often as not in science or non-science. The most admired person was, as often as not, a female, non-science person whom they admired most often for their motivation and hard work.

The white men most often reported that a male (87%) was most influential. This male figure was most often a parent or guardian non-science health person. The most admired person was a male (68%), non-science/health person with whom they enjoyed good relations. The white men were the only group to indicate that the achievements of the person most admired were second in importance. All other high school cohorts rated

"achievement" as the least important as an explanation of their admiration. Only the high school women "most admired" someone for their hard work nd motivation. All others consistently prized "good relations".

Longitudinal-Role Models

The most influential person in terms of career choice was most often female (60%), a parent or guardian (46%) engaged in a non-science/health career. Teachers and counsellors were influential only 16% of the time, and science and health personnel were important only 22% of the time. In general, the person most admired was a parent or guardian (72%). In further analysis, the persons this group most admired was most often female (68%), and was most often a non-science/health person (67%). Fourteen (14%) of this group most admired a housewife or unemployed person while only 19% most admired someone in a science/health category. The rationale behind their admiration was most often based on having "good relations" with that person. The achievement (17%) and motivation/work (19%) were next in importance; intellectual factors (11%) was least important to this cohort.

Cross-Sectional Cohort-Role Model

Most (67%) of these women indicated a female. The responses indicated that this person was most likely to be a non-health/science person. Teachers/ advisors, parent/guardian or other persons were almost equally ranked as being influential.

The person they most admired was also female and in a non-science career. Those in a science/health career were least often mentioned as being admired. Finally, the most admired person apparently had "good

relations" with the respondent. The motivation and hard work of this individual were of secondary importance. Intellectual factors were seen as least important.

SUMMARY

In summary, the black women, true to literature reports, most often cited a female parent as being most influential in her career choice. Our findings are similar to those of Pallone et al (1970) and Holland and Eisenhart (1981) who reported that family members were important role models, while teachers-advisors were of lesser importance. The findings in the high school population are in contrast to those reported in the June & Fooks (1980) study of college women. Our results in the Cross-Sectional cohort do complement the June & Fooks findings, however. Overall, it appears that the black women shifts her role model/admiration s she moves higher up the academic ladder. This shift may well be due to opportunities for exposure to women or others actually involved in career activities, and may simply highlight the paucity of more societally acceptable and traditional role models. We submit here that perhaps it is time, however, to review the inappropriateness of admiring parents. In our opinion, the ultimate determination of an appropriate role model may vary for different ethnic subsets. Therefore, while we note significant variations with our populations, we are unable at this writing to attach significant merit to role model selection. Again, the longitudinal study may provide significant insight and may settle the issue of the appropriate role model, if any exists, for the development of a black woman scientist. It should be noted here that in another study (Holland and Eisenhart, 1981) white women college students indicated the persons most influential in career decisions was reportedly one who served as a

source of information and encouragement, rather than as persons after whom she modeled herself.

Achievement Motivation

It is also consistently reported that there is a lower expectancy of success of females (Frieze, 1980). Girls underestimate-boys overestimate. These low expectations certainly may have implications for ultimate achievement levels.

It has also been reported that the expectations of others and the experience of success does not change the woman's expectation as Dweck (1975) and Jackaway (1974) found that providing subjects with success did not change the generalized expectations for success.

The success of men is more often related to ability and the failure of women to lack of ability (Feather and Simon, 1975; Etough and Brown, 1975); female successes were more often attributed to effort. Murray and Mednick (1977) suggest different patterns for black and white women. White women tend to make effort attributions more so than ability attributions, and employ more effort attributions than low achievement women. (Freieze, 1975). Black women with high achievement motivation, by contrast, employ both ability and effort attributions in a manner resembling men (Weiner & Kulka, 1970). Murray and Mednick suggest that concerns about sex role appropriateness may underlie the differential attributional patterns of black and white women.

The occupational and educational aspirations of women are linked with their achievement-related expectations (Canter, 1979). Canter further reparts that gender role conception, expectations, among others,

are significantly related to aspirations.

According to Rosen (1956, 1959) achievement motivation probably has its origins in certain kinds of parent-child interaction that occur early in the child's life and are likely to be emotional and unverbalized.

Middle class culture apparently supports the development of the achievement motive (Winterbottom, 1958; McClelland, 1971), and research indicates that children of high achieving mothers have high achievement motivation as opposed to low achievement mothers. Rosen asserts that the middle-class child is more likely than his lower class counterpart to have standards of excellence in scholastic behavior set for him by his parents. Middle class children are, essentially, taught to "stroke" the environment so that success will emanate. Rosen did not address female children.

The expectations of significant others are important in achievement, as women strive for social approval (affiliative reasons) (Hill and Dweck, 1969) more often than for intrinsic pleasure in mastering of a task (Crandall, 1963; Veroff, 1969).

Teacher Attitudes and Achievement

Teacher expectations are important because they can influence how the teacher interacts with the student, which in turn can alter the student's subsequent performance (Cooper, 1979; Dweck, 1975; Rosenthal and Jacobson, 1968). Research indicates that students pa . academic performance is likely to play a critical role (Braun, 1976; Cooper, 1979; Williams, 1976; Ryan and Levine, 1981).

Gender Differentials Among College Men and Women

College freshman women enter college with less positive orientation towards math, science and engineering majors than men (Parelius, 1981).

Even the highest achieving women in this study underrate their achievement and math and science abilities and did not select science-math-engineering majors.

Black Women and Achievement

Little information exists concerning achievement-related behavior of females in social groups other than the white middle class (Stein and Bailey, 1973; Murray and Mednick, 1977). The experience of the black woman in the job market place varies from "favored" over all others, including black men, to "pariah", i.e. counting as double minority. The myth that black women enjoy advantages is slowing dying (Jackson, 1973; Gurin and Pruitt, 1975). Black women in the recent past still aspired to traditional careers (Gurin and Epps, 1975; Mednick and Puryear, 1975) and therefore evidently had gender role concerns.

Role Models and Achievement: Black High School Women

Support from Family on the Degree of and Important Others

The subjects were queried about family support which they experienced. Ninety-four percent and 81% of the fathers were reported to be moderately to strongly supportive of the career goals. Interestingly, 7% of the mothers even reported as being "neutral" in terms of support, and three (3) percent of the fathers were reported as being strongly to moderately negative. The friends and dates of these young women were overwhelmingly supportive (+80%) and only two (2) percent indicated that their date was slightly non-supportive.

Since support is often correlated with academic expectations and performance, the young women answered a number of questions in this area. Their mothers most often reportedly "expected just enough" of them (66%)

grade wise, and twenty-eight (28) percent reportedly expected "a little" to "way too much". Fifty-six (56) percent of the fathers expected "just enough" and thirty (30) percent reportedly expected "a little" to "way too much". This is interesting, in that they felt that their fathers expected too much academically, yet their fathers were not as supportive of their career goals. One wonders about intra-family communication. Perhaps there is an absence of some needed dialogue.

In an attempt to examine how their teachers perceived their ability, students were asked whether their intellect was overrated by their teachers. Forty-four (44) percent felt that their intellect was often overrated by teachers. (See Imposter Syndrome). Five (5) percent felt that they were "almost always" overrated. Thirty-one (31) percent felt that they were "almost never" overrated. Seventeen (17) percent were "often" overrated by their mothers. Fathers "almost never" overrated 27% of the population, and "often" to "almost always" overrated their daughters 33% of the time. Again, one wonders why the young women perceived less career support from their fathers while they seemed to experience intellectual support from father and mother to a comparable degree. Again, is dynamic family dialogue the key here?

The important issue of role models was investigated as career-salient women reportedly choose appropriate role models (Almquist and Angrist, 1971). Thirty-seven percent listed their parents as being more influential in their career choice. Teacher/counsellors and siblings both rated the same (14%) in terms of being influential in the career choice. "Others" as a group were almost as important (34% as parents. There was, therefore, no clear indication that professional/career persons were influential

in the choice of career.

When queried on the issue of role models, 75% indicated that a woman was their most admired person. Seventy-one percent of these persons were non-science career persons. Only 11% were in the sciences or health area. Fully 18% were housewives (mother) and unemployed others.

The responses obtained in this battery in summary, indicate good career support and achievement expectations from others. Yet, the matter of role models is interesting because overwhelmingly career was not "matched" in what has been reported as significant. Yet, it must be recalled here that black women have not always had access to role models, and it has not definitely been proven that this is a requisite for career success. The needs addressed by this "role model" may be just s important as the career held by this person. Further research is needed here.

Role Models and Achievement: White Women

White women responded to an identical battery of questions. Eighty-eight percent reported slight to moderate non-support from their mothers. (None of the black women reported slight to moderate non-support from their mothers.) Eighty-three percent of the fathers were strongly to moderately supportive; only two (2) percent were moderately to strongly non-supportive.

Academic expectations of important persons were also probed. Mothers expected a little too much (23%); no mothers were reported as expecting "way too much". Eleven (11) percent of the fathers expected "way too much", (15% expected "a little too much"). Twenty-seven (27) percent felt that they were "almost never" overrated by their teachers, while only two (2) percent felt they were "almost always" overrated. Only eight (8) percent

felt they were "often" overrated by their teachers (as compared with a twenty-one percent response on this same item from black women). One can only wonder here which group (black women or white women) is most accurately experiencing or perceiving teacher rating. If this variable is as important as reported (Potter, 1981; Ryan and Levine, 1981), then the black women should be excelling at high levels in their classroom. (See Imposter Syndrome, also).

It is tempting, at this juncture to speculate on the impact and significance of high teacher expectations on student performance. Again, however, perhaps a chasm exists between student perception, teacher expectation and student ability.

Forty-two percent of the mothers and 41% of the fathers "almost never" overrated their daughter's intellectual ability. Eight percent of the mothers and 21% of the fathers "often" overrated their daughter's ability.

The white women respondents indicated that parents or guardians were most influential in their career choice (43%). This group was followed by other, (29%) and teacher/counsellor (24%). Siblings were influential to only 5% of the respondents. There seems to be here a clear distinction between the black and white women's responses here, with the familial circle being more important to the black woman.

The white women were more evenly split in role models and 54% indicated that a female was their "most admired person. Still in this group, however, 62% of the role models held non-science careers and only 22% were identified as having a career in science or health.

Longitudinal Cohort

Academic Performance Expectations

In terms of academic performance 15% felt that their mothers expected too much and 23% indicated that their fathers expected too much. Seventy-four percent of the mothers and 56% of the fathers expected just enough. All other responses indicated that these parents did not expect enough. The longitudinal group felt that their teachers overrated their ability 45-50 percent of the time. This group apparently set high achievement standards, and "often" to "almost always" performed on examinations below their norms 27% of the time. It is interesting that 20% indicated that their test results were almost never below their norms.

Cross-Sectional-Role Model-Achievement

Fifty-four percent of these respondents indicated that their mothers and fathers expected "just enough"; 17% of the mothers expected too little and 29% expected too much. These responses were similar to those seen in the longitudinal cohort. The high school cohorts (women) reported in higher numbers that mothers and fathers expected just enough.

When queried on teacher expectations, fully 49% indicated that their teachers "occasionally" overrated their ability. Only 32% felt that their teachers "almost never" overrated their ability. The parents of approximately 50% of the respondents "almost never" overrated the ability of their children according to our respondents. The students, therefore, report that their parents at least half of the time rate their ability accurately and expect them to have sufficient ability to succeed. There seems, in essence, to be a good supportive network.

SUMMARY

In summary, the young black women and her white counterparts all have high aspirations. They expect to succeed and they experience strong support from individuals whom they identify as being important. Their motivation levels are all, generally very high. We conclude that we cannot blame the victim here if she fails to achieve. We must, rather, explore society for the dynamics variables which will operate to mitigate against her success.

VI. DEVELOPMENT OF INDICES FOR EACH BEHAVIORAL CHARACTERISTIC

Individual group analyses presented earlier was not sufficient to allow inter-group comparisons. We, therefore, constructed indices of each behavioral group and then carried out stepwise multiple regression to determine which variables were most important in indicating characteristics of each cohort. The procedure and results are discussed below.

Development of Indices for Each Behavioral Characteristic-Crosstabulations

All questions (variables) which gave data on the characteristic being studied were scored as follows to develop an index. (The items used in index development are listed under Regression Analysis.

Fear of Success Index

An index ranging from 0-5 with zero indicating no fear of success and five indicating a high degree of success was established. All responses were described in the preceding discussions.

Imposter Phenomenon Index

An index ranging from 0-13 was established and will be analyzed as was (1). All values were normalized so that cross category comparisons could be made.

Role Models and Achievement Index

All significant responses to questions will be coded with the number one. All others were ignored and did not interfere with profile development.

The cross-tabulated data served as the basis for the construction of the multiple regression analyses.

VII. REGRESSION ANALYSIS RESULTS

We wished to determine which of the items in our behavioral characteristics section (i.e. FOS, Imposter, Role Model/Achievement) contributed most significantly to the building of the total index. We, therefore, employed stepwise multiple regression to determine the relative importance of each variable in each population and the utility of the variables in predicting the characteristic.

The specific variables listed for each behavioral characteristic are listed below. It should be noted that the variables are not always exclusively related to one characteristic.

Fear of Success-The variables used in constructing the index, and rank order of the variables for black women after stepwise multiple regression.

1. Attitude towards a woman earning more than her husband-student rationale/response in open-ended questions. (Q37B)
2. Willingness to speak up in a group of mostly women, mostly men, or equal numbers of each sex. (Q17)
3. Mind if woman's salary higher-Yes or No. (Q37A)
4. Expected change in attractiveness to opposite sex after achieving career goals-RATIONALE/REASONS in open-ended questions. (Q19)
5. Expected change in attractiveness to opposite sex after achieving career goal-Degree of change. (Q18)

All other group comparisons are made to the above rank ordering.

Fear of Success

The FOS variables contributing most to the incidence of any possible

FOS occuring in the population are as follows.

The profiles generated on the black women science majors were identical to those seen in the white women science majors. Significant variables related to any imagery presented related to "minding if a woman's salary was higher", and willingness to speak up before a group of men or women or mixed groups. The other items related to degree of attractiveness after obtaining their career. However, these did not contribute significantly more to the analysis.

The white men were the only group who was concerned about one variable only, i.e. that related to the woman's salary.

We submit that the responses given, while reflective of the students feelings are more related to the reality of their experiences. In most cases the salary of the mothers was higher and the divorce rates were also high. The culturally induced feeling that the man should "provide for his family" is real. The response here, therefore, is possibly more related to reality than to fear of success.

The lack of scores indicating significant fear of success on other items indicates to us that FOS is not a significant factor in our population.

Black Women-Science Majors

	Multiple R	R Square	RSQ Change	Simple R*	Beta
37B	0.777	0.608	0.608	0.779	0.515
17	0.908	0.825	0.217	0.432	0.429
37A	0.959	0.920	0.094	0.716	0.444
19	0.982	0.965	0.045	0.341	0.226
18	1.000	1.000	0.034	0.086	0.186

White Women-Science Majors

	Multiple R	R Square	RSQ Change	Simple R	Beta
37A	0.809	0.655	0.655	0.809	0.395
17	0.889	0.790	0.135	0.518	0.464
18	0.980	0.960	0.165	0.228	0.260
37B	0.991	0.983	0.023	0.783	0.413
19	1.000	1.000	0.016	0.259	0.215

Black Men-Science Majors

	Multiple R	R Square	RSQ Change	Simple R	Beta
37B	0.895	0.801	0.801	0.895	0.446
17	0.933	0.871	0.070	0.389	0.284
37A	0.972	0.945	0.074	0.890	0.509
19	0.986	0.972	0.026	0.108	0.166
18	1.000	1.000	0.027	0.108	0.166

White Men-Science Majors

	Multiple R	R Square	RSQ Change	Simple R	Beta
37B	0.956	0.914	0.914	0.956	0.533
37A	1.000	1.000	0.085	0.952	0.514

Longitudinal FOS - NO DATA was generated due

Cross-Sectional

	Multiple R	R Square	RSQ Change	Simple R	Beta
37B	0.800	0.641	0.641	0.800	0.381
19	0.906	0.820	0.179	0.602	0.230
17	0.949	0.901	0.080	0.176	0.318
37A	0.986	0.973	0.072	0.771	0.450
18	1.000	1.000	0.026	0.547	0.278

*Correlation Coefficient

Black Women-Non-Science

	Multiple R	R Square	RSQ Change	Simple R	Beta
37A	0.554	0.307	0.307	0.554	0.527
18	0.800	0.640	0.333	0.521	0.514
37B	0.899	0.808	0.168	0.541	0.482
17	1.000	1.000	0.191	0.388	0.456

White Women-Non-Science

	Multiple R	R Square	RSQ Change	Simple R	Beta
37B	0.858	0.737	0.737	0.858	0.369
17	0.972	0.945	0.208	0.752	0.525
18	0.987	0.975	0.029	0.078	0.174
37A	1.000	1.000	0.024	0.813	0.335

Imposter Syndrome

Variables used in constructing the index and rank order in Black Women Science Majors of these after stepwise multiple regression.

1. Mother's estimation of ability. (45A)
2. Brightness vs. same major and same. GPA (13)
3. Comparison with students, same major, similar GPA versus time and effort. (Q16)
4. Teacher estimation of ability. (Q44)
5. Hard work versus same sex. (Q15)
6. Brightness versus same sex. (Q11)
7. Relative importance of abilities and good luck in success. (Q43)
8. Amount of hard work as compared to opposite sex. (Q14)
9. Threats to educational plans. (Q22)
10. Comparison of brightness to opposite sex. (Q12)

Other items used but which did not compute significantly in the regression analysis were self assessment of abilities and expectations for success.

Black Women-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
45A	0.671	0.450	0.450	0.671	0.393
13	0.823	0.678	0.228	0.383	0.190
16	0.913	0.835	0.156	0.418	0.387
44	0.936	0.877	0.041	0.584	0.381
15	0.960	0.923	0.046	0.165	0.211
11	0.981	0.963	0.040	0.402	0.166
43	0.986	0.973	0.009	0.060	0.211
14	0.994	0.989	0.016	0.248	0.230
22	0.998	0.996	0.006	0.283	0.190
12	1.000	1.000	0.003	0.373	0.136

White Women-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
44	0.548	0.301	0.301	0.548	0.344
15	0.698	0.488	0.187	0.480	0.302
16	0.815	0.664	0.175	0.371	0.580
45A	0.886	0.786	0.121	0.513	0.380
13	0.926	0.858	0.072	0.387	0.30?
14	0.955	0.912	0.054	0.343	0.25?
12	0.984	0.968	0.055	0.050	0.250
22A	1.000	1.000	0.031	0.218	0.178

Black Men-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
45A	0.515	0.266	0.266	0.515	0.359
14	0.726	0.527	0.261	0.490	0.232
11	0.847	0.718	0.190	0.492	0.127
44	0.894	0.800	0.082	0.491	0.359
15	0.924	0.855	0.054	0.352	0.280
16	0.964	0.930	0.075	0.499	0.365
13	0.976	0.954	0.023	0.192	0.199
12	0.988	0.976	0.022	0.323	0.179
22A	0.995	0.991	0.015	0.419	0.179
43	1.000	1.000	0.008	0.064	0.092

White Men-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
15	.775	0.600	0.600	0.775	0.344
16	.848	0.720	0.119	0.616	0.402
14	.915	0.838	0.118	0.686	0.366
13	.950	0.903	0.064	0.399	0.178
45A	.972	0.945	0.042	0.399	0.245
44	.981	0.963	0.018	-0.107	0.146
22A	.989	0.979	0.015	0.348	0.146
12	.994	0.989	0.010	0.191	0.104
43	1.00	1.000	0.010	0.084	0.104

Longitudinal-No Data

Cross Sectional

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
45A	0.737	0.544	0.544	0.737	0.337
16	0.819	0.671	0.127	0.352	0.355
15	0.900	0.810	0.138	0.474	0.271
14	0.935	0.874	0.064	0.437	0.233
44	0.961	0.923	0.048	0.644	0.346
13	0.979	0.959	0.035	0.298	0.152
12	0.988	0.977	0.017	0.219	0.152
43	0.997	0.994	0.017	0.377	0.152
22A	1.000	1.000	0.005	0.319	0.108

Black Women-Non-Science

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
45A	0.680	0.462	0.462	0.680	0.438
16	0.811	0.657	0.195	0.439	0.394
44	0.882	0.779	0.121	0.509	0.404
11	0.919	0.845	0.065	0.311	0.209
14	0.958	0.917	0.072	0.387	0.307
13	0.979	0.960	0.042	0.311	0.209
15	0.997	0.994	0.033	0.193	0.239
12	1.000	1.000	0.005	0.218	0.122

White Women-Non-Science

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
15	0.702	0.493	0.493	0.702	0.334
16	0.835	0.698	0.205	0.571	0.391
45A	0.939	0.881	0.183	0.614	0.334
44	0.968	0.937	0.056	0.319	0.221
14	0.986	0.972	0.034	0.657	0.277
22A	0.994	0.988	0.016	0.179	0.131
13	1.000	1.000	0.011	0.448	0.131

Imposter Syndrome

Variables contributing significantly to the development of this index for black women were mother's estimation of ability, brightness versus same major and same GPA, and time and effort required to succeed as compared to students with the same major and same grade point average (GPA). "The anxiety" here may simply be related more to a desire to please, and, therefore, is not symptomatic of psychological dysfunction (Kaufman & Richardson, 1982).

For white women teacher estimation of ability, hard work required as compared to same sex, time and effort required as compared to same major, same GPA, and mother's estimation of ability, in this order, were important. For them, therefore, feelings about teacher estimation of ability and hard work distinguished them from the black women.

For black men, mother's estimation of ability, degree of hard work required as compared to those of the same sex, time and effort required as compared to students of same major and similar GPA, followed by amount of hard work s compared to members of the opposite sex.

Analysis of the Cross-Sectional (i.e. college senior) cohort indicated that mother's estimation of ability, comparison of time and effort required versus those of same major and the amount of hard work required versus that required from those of the same sex were significant.

In general, here again we can find only limited support for the imposter phenomenon and conclude that the data obtained are simply reflective of realistic attitudes about life. Specifically, mother's estimation of their ability is more "important" to the all black students, regardless of major

or sex. This same variable does not contribute significantly in responses of the white students. (One should recall here that the theory was generated on data on white middle-class women.) The attitudes toward hard work we would like to consider as appropriate in any competitive setting and, therefore, not an indicator of any behavioral problem.

Role Models-Achievement Variables

Variables used in constructing the index and rank order of the relative importance of these for black women after stepwise multiple regression analysis.

1. Estimation of student's intellectual ability by mother. (Q45A)
2. Expectations of father in terms of grades. (Q42B)
3. Feelings of Friends about subject's career aspirations. (Q41C)
4. Feelings of date or spouse about career aspirations. (Q41D)
5. Estimation of student's intellectual ability by the teacher. (Q4
6. Expectations of mother in terms of grades. (Q42A)
7. Support of mother for career plans. (Q41A)

Black Women-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
45A	0.768	0.591	0.591	0.768	0.387
42B	0.898	0.806	0.215	0.540	0.288
41C	0.930	0.865	0.058	0.322	0.269
41D	0.956	0.915	0.050	0.574	0.269
44	0.978	0.958	0.042	0.687	0.358
42A	0.994	0.989	0.030	0.083	0.196
41A	1.000	1.000	0.010	0.360	0.115

White Women-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
41C	0.887	0.787	0.787	0.887	0.345
41D	0.918	0.843	0.055	0.748	0.442
42B	0.956	0.914	0.070	0.116	0.255
45A	0.986	0.973	0.059	0.297	0.255
42A	0.991	0.982	0.008	0.669	0.255
41A	0.995	0.991	0.009	0.255	0.255
44	1.000	1.000	0.008	0.110	0.184

Black Men-Science Majors

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
44	0.628	0.394	0.394	0.628	0.376
45A	0.802	0.643	0.248	0.577	0.406
41D	0.908	0.825	0.181	0.456	0.304
42A	0.941	0.885	0.060	0.370	0.224
41C	0.980	0.962	0.076	0.592	0.376
42B	1.000	1.000	0.037	0.370	0.224

White Men-Science Majors - No Data - Not enough bytes for computation

Longitudinal - Not enough bytes for computation

Cross-Sectional

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
42A	0.695	0.483	0.483	0.695	0.311
45A	0.797	0.636	0.152	0.529	0.331
41C	0.885	0.784	0.148	0.423	0.348
42B	0.925	0.856	0.071	0.578	0.331
44	0.960	0.922	0.065	0.520	0.348
41D	0.984	0.968	0.046	0.176	0.230
41A	1.000	1.000	0.031	0.243	0.191

Black Women-Non-Science

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
41C	0.473	0.224	0.224	0.473	0.481
42A	0.680	0.463	0.239	0.346	0.544
45A	0.829	0.687	0.224	0.419	0.476
41D	0.915	0.838	0.150	0.472	0.389
44	0.989	0.979	0.140	0.416	0.425
41A	1.000	1.000	0.020	0.138	0.162

White Women-Non-Science

Variable	Multiple R	R Square	RSQ Change	Simple R	Beta
41C	0.820	0.672	0.672	0.820	0.294
42B	0.924	0.855	0.182	0.710	0.221
41A	0.959	0.920	0.064	0.542	0.325
45A	0.971	0.942	0.022	-0.002	0.274
41D	0.985	0.971	0.028	0.654	0.325
44	0.994	0.989	0.018	0.246	0.132
42A	1.000	1.000	0.010	0.715	0.250

Role Model/Achievement

Variables most important in constructing the black woman high school science major are estimation of intellectual ability by mother and expectations of father in terms of grades. White women gave more distinctive responses here and indicated that the feelings of the friends, mate, and/or date would influence their career. Feelings of friends were most important to them. The only other cohort where this variable ranked first were black women non-science majors. However, their ranking was not as high.

For the Cross-sectional cohort, evidence of the mother's importance was preponderant as mother's expectations in terms of grades and mother's estimation of intellectual ability. Feelings of friends about their career expectations were also important.

No data computed on the white men. Their individual responses as earlier before indicated that their responses were consistent with those defined as being "appropriate" according to the literature. Therefore, by our standards, they apparently have selected more "appropriate" role models and get realistically based support and expectations.

We must note, at this point, however, the unique challenges which arise when one attempts to construct paradigms which equally apply. Our index was based on literature standards. The standards in the literature were principally developed by white, middle-class molds. The standards may be true for this group. Failure to meet these standards may not bode ill for other groups, unless, of course, those in power position choose to force the mold rather than ponder and accept without prejudice, the differences.

In summary, while we would argue for the opportunities for more exposure of all students to role models, sources of information, educational experiences, it is clear to us that much of what we see is simply a reflection of ethnic (race, sex) variability and we choose not, at this point, to exact judgments on the likelihood of success of any of our cohorts.

VIII. PROFILE OF THE BLACK WOMAN PURSUING A CAREER IN SCIENCE

Demographic and Socioeconomic Characteristics

The black woman pursuing a career in science or the health professions is likely to be from a home where the mother enjoys higher employment status than the father. Her mother will be as well educated, or better educated than the father, yet she, despite her higher employment status seems more likely to receive a lower salary.

The young black woman will see herself as a member of the middle-middle class (despite hard economic data to the contrary). She is a first born one-third of the time. She has an average of 1.6 sisters and 1.4 brothers.

Academic Profile

The black high school woman pursuing a science/health professions career is as likely as not to be enrolled in a pre-college tract in high school, in sharp contrast to her white counterpart. She is likely to have a "B" average, but many will have a "C+" average. Nevertheless, her grades while not as high as those of the white high school woman, are as high or higher than those reported by black and white high school men.

The black adolescent women will probably have SAT scores of 400 or less in both math and verbal areas; but, it is very possible that she has not taken the SAT, or does not know her SAT scores (again in sharp contrast to her white women and men counterparts). Nevertheless, her SAT scores will always be lower, as a rule than those reported by the white students (men and women).

The grades of the black high school women will be B or C in mathematics, and B in science. She is likely to feel positively about her experiences in

all these subject areas, though she is sometimes less positive than the men about her science experiences. Her positive attitude is intriguing because in reality her grades, standardized test scores and even socioeconomic status (actual as opposed to perceived and reported) indicate that she will face several challenges as she proceeds along her career path.

Degree Expectations

The black woman has high degree expectations and if she succeeds, she will have more and higher degrees than any of the other groups studied.

The Black Woman College Student

As she matures (i.e. enters college), the overall income and educational level of her father will have improved, (indicating perhaps that some peers from lower socioeconomic class have been "lost" from the pool). The educational level of her mother will also have improved.

Her performance level in mathematics will have decreased from B to C. She is, however, more likely to have been enrolled in a pre-college curriculum tract, even though her SAT scores will still be essentially identical to those reported by the full black woman high school cohort. In general, she still has a very positive feeling about her major.

Personal and Career Goals

During the ten year period following her graduation from high school this young woman plans to be involved in career and marriage-related activities. She plans to marry a professional, and to begin her family after age 23 and wants, as often as not, only two children. (She is closest in these plans, to the white men surveyed.) She plans to return to work no longer than six months after she has her children.

The black women plan to work for 40 or more years, principally for self-satisfaction, unless she has children. With children, she is more likely to work for money. (Her white woman counterpart was the only group to indicate that even with children she would continue to work principally for self-satisfaction.) She plans to work 5-8 hours/day and planned to spend 9 or more hours/week in home, family or recreation-related activities. In spite of her career-related activities, she feels that she should have to assume only 50% of all household chores, but expects to have to assume more of these chores.

Family Support

This young woman receives strong support from her mother and father, though support of the mother is greater. She expects to be successful, though, she is less sure of this than are the white women and black and white men. Her parents both expect her to be successful and, therefore, seem to provide a backdrop against which she may pursue her career.

This yong woman feels a great degree of personal control over her fate and is, in this respect, similar to her black and white men peers. She feels that her intellect is important, though she does not value it as highly as do the men. She does feel it is more important, however, than any other internal factor. She feels that her most important internal traits are knowledge and intelligence. She will differ here again as all other cohorts ranked "hard work" as their most career helpful traits.

Behavioral Characteristics

Fear of Success

The black high shcool woman does not "fear success" in any manner different from that observed in white women. Further, she tends to cast

doubt on the existence of this motive as an operative in career development.

The major area where any FOS imagery is noted relates to her making a salary higher than her mates or her willingness to speak up before a group of mostly men. We submit that these are societally induced pehnomena and sensitivities, and have little or nothing to do with fearing success. She probably has an overwhelming tendency to accomplish all. This has healthy aspects.

The Imposter Syndrome

The black high school woman does feel that her mother overestimates her ability, and that while she perceives herself to be as bright as or brighter than those of the same major and GPA, she will have to work harder than these peers. We do feel that here she is exhibiting competitiveness and a desire to excel, as well as please her strongest supporter. These are not necessarily, in our opinions, traits which will cause her undue difficulties.

The black woman does not seem as concerned over teacher estimation of ability (though the correlation coefficient does suggest that she feels similarly about the mother's expectation) as does her white woman counterpart. Otherwise, she does not differ from white women significantly in items which "concern" her.

The black woman is different from black men in this category in that black men in this category are often concerned over mother's estimate of their ability, are most concerned over degree of hard work required as compared to those of the same and opposite sex. She also differs from the white men who had evidenced no familial "concerns", but who were

concerned about time and effort and degree of hard work required as compared to both sexes.

In summary, the black adolescent herein is realistic and competitive and seems assured that she is bright, though perhaps not as bright as her mother thinks. She seems not to exhibit the Imposter Syndrome as developed by Clance & Imes (1980).

Role Models

The black woman pursuing a career in science/health professions is likely to be most influenced by a parent or someone other than a teacher/counsellor or sibling. She most admires a woman who is engaged in a non-science whom they admired for their good relations with this person. She is similar to her white woman counterpart in that both indicate that their parents are most influential in their career choice. However, her white woman counterpart will as likely select a non-science man or woman role model whom she admires for their hard work and motivation. The black woman differs from her white male counterpart who indicated that his most admired person and the person most influential in his career choice is a male.

In summary, the black woman pursuing a career in the sciences or health professions is confident of her abilities and optimistic of her opportunities for career and personal success. She seems to have characteristics in many areas which are relatively consistent with those found in black men and white men and women.

We have, however, identified some factors which set her apart and which may present difficulties for her. These are: (1) Academic advisement/

counselling inadequacies which result in improper training for college; (2) Inadequate mathematics preparation; (3) Her idealistic feeling that intellect and knowledge are more important than hard work, i.e. persistence; (4) Less self-confidence in her ability and success expectations, as compared with other groups; (5) Her strong commitment to combining school-career-family at an early age and (6) Potential conflicts over family size.

We have, therefore, come full circle in some ways and we must now remedy the academic deficiencies noted if we are to seriously redress the under-representation of black women in science. We have eliminated in this population, serious attributions of failure to behavioral characteristics. At issue are academics. The challenge seems to be clear.

IX. PROJECTIONS FOR THE LONGITUDINAL STUDY

The data on hand from students who completed the longitudinal survey questionnaire requires further refinement. While the data presented represented the entire cohort (men and women), we recognize the need to analyze the data by separate ethnic subsets and sex. This method was avoided for this report since we wanted to generate baseline longitudinal data for the entire group who responded.

The first analysis which will be completed will be to analyze data on the black women who responded and to compare them to cohort data presented in this report. All other response groups were too small, in our opinion to allow for generalization of any findings (see Methodology).

A final mailing of the questionnaire is planned for September, 1985. At that time all of the high school individuals who responded to our first survey mailing will be recontacted. They should all be college seniors. In addition, survey forms will be mailed to all individuals contacted in our high school survey in an attempt to generate a pool size large enough for meaningful analysis. The need for this study is paramount as there is little baseline data on the black woman scientist as she traverses the adolescent years. The limitation in implementing the planned study is monetary. We do plan fund solicitation to underwrite the expenses of mailings and data analysis. Telephone surveys will also be used as often as possible.

The results of the longitudinal study will provide definitive data on the black adolescent woman who aspires to a career in science. The ones who respond will likely be the ones who made it. We will, therefore, know the paths she has traveled, the difficulties she has encountered

and the charateristics which helped her persist. We will also know, perhaps, how she compares with other groups who made it, and will be able to assess the significance of any diversities encountered.

X. FUTURE STUDIES - RECOMMENDATIONS

1. It is of paramount importance that one research immediately the dynamics of the counselling/advisement setting in school systems. The fact that so few black women (both science and non-science majors) are advised to enroll in pre-college curricula, implies that an unspoken, but systemmatic method is operating to lower, not raise, the educational aspirations of these young women. It is of axiomatic that unless pre-college training is adequate, the young women will likely fail or fare poorly if she enrolls anyway. Remediation is essential in counselling and advisement strategies. Studies should focus on the most efficient and effective methods for improving this critical service area.

2. Research is needed on what are actually effective role models. Black women are continually characterized as non-career salient and, therefore, penalized by the dominant structure if she admires her mother or chooses some other "inappropriate" individual.

3. Instructional techniques which will remediate the mathematics deficiencies should be developed and implemented. Both the black women and men studied demonstrated lower performance levels. Compensatory activities should be given priority, once developed.

4. Gender roles and the stress that these impose on black women should be investigated more thoroughly. There seems to be an acknowledgement that this woman will combine all the activities necessary for her to feel fulfilled. The question is "at what cost?" Research in this area should assess the degree of the problem and develop dynamic strategies which will sensitize her family, friends and mate to the

roles which they should appropriately play if they wish to see black women succeed in highly demanding career traits.

5. Research methods should devise strategies sensitive to the remediation of needs of the different ethnic groups. The cultural experiences and conditioning area different. Their expectations are different. The strategies to redress their needs must be sensitively designed to recognize the differences, yet promote their success.

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APPENDIX A

Morris Brown College

INFORMED CONSENT FORM

We are conducting a survey of high school and college students and their plans for the future. We are asking you to help us by participating in this study. This requires that you answer some questions concerning your history and your plans for the future.

None of the questions on this questionnaire are expected to upset you in any way. In fact, many students find the questions interesting since they are stimulated to think about their future and to consider some things which they may not have thought about before.

This study is sponsored by the National Institute of Education. The data from these questionnaires may benefit other students in the future by providing high school and college counselors with information concerning what they can do to help students to plan and to achieve their career goals.

Any information you give us will be held in strict confidence. Although you are asked to sign this sheet, this sheet will be detached from the questionnaire so that no one, except the principle researcher, can match your answers with your name. Since the questionnaire does *not* have your name on it, we are hoping that you will consider all questions carefully and answer them honestly.

Taking part in this project is completely voluntary. If you begin the questionnaire and then decide to stop answering the questions, you are free to do so. Your reward for helping in this project will be the knowledge that you have shared your experiences and plans with the scientific community in an attempt to help other young adults in the future.

I will be glad to answer any questions you might have about this study or about what we are asking you to do. If you would like to help us with this study, please read and sign the statement below:

> The nature of this study has been described to me and I have been given a chance to read the written explanation above. I understand that taking part in this project is voluntary and I agree to participate.

_____ _____

Signature of Student Date

_____

Printed name of student

_____ _____

Address of Student Telephone No.

_____

_____

STUDENT CHARACTERISTICS INVENTORY

We are interested in finding out about *You!* What is your background, what are your interests, and what are your plans for the future? Thinking about the questions on this questionnaire may help you to clarify your plans for the future. Please help us by doing the following:

1. Think carefully about what we are asking and try and give an honest and complete answer.
2. If you do not understand a question, quietly walk up to the front of the room and ask.
3. If a question is inappropriate for you, just put N/A for "not applicable". This will seldom happen.
4. Answer as quickly as possible as you have only 50 minutes.
5. Once you have completed a question, do not return to it.

1. What is your a. age: _____

   b. sex: _____

   c. racial or ethnic group: _____

   d. place you have lived the longest: _____
   city state

Socioeconomic Info

2. Answer the following concerning your real (blood-related) parents:

   a. Is your mother living? (circle one) ..... YES NO N/A

   b. Is your father living? (circle one) ..... YES NO N/A

   c. Were your parents: Married (circle one) ..... YES NO N/A

   d. Never Married but living together (circle one) ..... YES NO N/A

   e. Married but separated (circle one) ..... YES NO N/A

   f. Married and then Divorced (circle one) ..... YES NO N/A

   g. Never Married and Father unknown (circle one) ..... YES NO N/A

   h. None of the above (write in) _____

   _____

   _____

Socio economic Info

   If parents were divorced or separated, how old were you when this occurred? _____

   With whom did you live most of your life? _____

3. Answer the following questions about the male and female who raised you for most of your life whether it was your mother and father, grandmother and grandfather, sister, etc.

   Where do your parents or guardians work and what do they do?

a. Mother or Guardian works at _____

b. Mother or Guardian works as a _____

c. Father or Guardian works at _____

d. Father or Guardian works as a _____

4. What was the highest level of education completed by your parents or guardians? (circle one)

a. Mother or guardian completed:

gradeschool	1	2	3	4	5	6	7	8
highschool	1		2		3		4	
college	1		2		3		4	
graduate school	MA/MS				M.D.		Ph.D.	
other _____								

b. Father or guardian completed:

gradeschool	1	2	3	4	5	6	7	8
highschool	1		2		3		4	
college	1		2		3		4	
graduate school	MA/MS				M.D.		Ph.D	
other _____								

5. What is the yearly income of your father and mother or guardians? (circle one)

a. FATHER (or male guardian)

Zero	0-$6,000-	$6,000-$12,000	$12,000-$18,000	$18,000-$24,000	$24,000-$30,000	$30,000-$36,000	other _____

b. MOTHER (or female guardian)

Zero	0-$6,000	$6,000-$12,00	$12,000-$18,000	$18,000-$24,000	$24,000-$30,000	$30,000-$36,000	other _____

6. What would you say was your family's SOCIAL CLASS during most of your life? (circle one)

Upper social class	Upper middle class	Middle middle class	Lower middle class	Lower social class

7. What religion are a. you? _____

b. Your mother or guardian? _____

c. Your father or guardian? _____

8. How many brothers and sisters do you have? a. _____

b. Number of Brothers _____

c. Number of Sisters _____

d. Ages of Brothers _____

e. Ages of Sisters _____

9. Circle when you were born in relation to your brothers and sisters: 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, or _____

10. What abilities do you have that have helped you in school so far and which will help you to complete the schooling necessary for your chosen profession? List several please.

_____

_____

_____

_____

11. Compared to most members of your own sex that you know, how bright do you think you are? (circle one)

much brighter	moderately brighter	slightly brighter	the same	slightly less bright	moderately less bright	much less bright

12. Compared to most members of the opposite sex that you know, how bright do you think you are? (circle one)

much brighter	moderately brighter	slightly brighter	the same	slightly less bright	moderately less bright	much less bright

13. Now think of all the students who have the same major as you and who have a similar grade point average. Compared to this group, how bright are you? (circle one)

much brighter	moderately brighter	slightly brighter	the same	slightly less bright	moderately less bright	much less bright

14. Compared to most members of the opposite sex that you know, how hard will you have to work to realize your career aspirations? (circle one)

much harder	moderately harder	slightly harder	the same	slightly less	moderately less	much less

15. Compared to most members of your own sex that you know, how hard will you have to work to realize your career aspirations? (circle one)

much harder	moderately harder	slightly harder	the same	slightly less	moderately less	much less

16. Now think of all of the students who have the same major as you and who have a similar grade point average. In recent times, how much time and effort have you put into your studies in comparison to those with similar grade point averages? (circle one)

much more time	moderately more time	slightly more time	the same time	slightly less time	moderately less time	much less time

---

17. In an intellectual discussion, in which situation would you be most likely to speak up on a subject on which you are well informed? (check one)

____ group of mostly women ____ group of mostly men ____ group of equal numbers of women and men

18 After attaining your career, how socially attractive to the opposite sex do you expect to be in comparison to your present attractiveness? (circle one)

much more attractive	moderately more attractive	slightly more attractive	just as attractive	slightly less attractive	moderately less attractive	much less attractive

19. Why did you answer #18 as you did? _____

_____

_____

_____

20. Please answer some questions about your education:

a. Are you in high school or college? (circle one)
High School
College
Not in School

b. Name of School if applicable _____

c. What year in school? (if applicable) (circle one)
Freshman
Sophomore
Junior
Senior

d. What was (or is) your high school grade point average or average %? _____

e. What is your college grade point average (if applicable)? _____

f.g. What were your SAT scores (if taken)? Math = Verbal = _____

h. What is your present average in the following courses:

j. Math _____

k. English _____

l. Science _____

m. Are you (or were you) in a pre-college curriculum in high school? (circle one)
YES
NO

n. If you go to college, what is or will be your major subject? _____
N/A

o. If you to go college, what is or will be your minor subject? _____
N/A

004

21. What is the highest educational degree you expect to receive in your lifetime? (circle one)

High school | Junior college or Associate | Bachelor's degree | Master's | M.D. | Ph.D or equivalent

22. Can you think of anything that might keep you from completing the education you want?

_____

_____

_____

23. What are your feelings toward taking upper level courses in the following subjects? (circle one)

a. ENGLISH

strongly positive | moderately positive | slightly positive | neutral | slightly negative | moderately negative | strongly negative

b. MATHEMATICS

strongly positive | moderately positive | slightly positive | neutral | slightly negative | moderately negative | strongly negative

c. SCIENCE

strongly positive | moderately positive | slightly positive | neutral | slightly negative | moderately negative | strongly negative

---

24. If everything goes according to *your* plans, what will you be doing in ten years? Please comment on both your work and home life.

_____

_____

_____

25. Do you already have children? (circle one) a. YES
NO

b. If so, how many do you have? _____

c. What are their ages? _____

d. How old were you when you had the first child? _____

26. Do you want children (or additional children) eventually? (circle one)

a. YES
NO

b. If yes, about how many children total do you want? _____

c. If yes, at about what age do you want your first or next child? _____

d. For women only: If and when you have your first child (or additional children) how soon do you expect to return to work? (circle one)

0-1mo | 1-3mos. | 3-6mos | 6mos-1yr | 1yr-5yrs | after 5 years | never

or other? _____

27. What is your marital status? (circle one)

never married married separated divorced widow/er unmarried/living together

28. If you are married,

a. At what age did you marry? _____

b. What does your spouse plan to do for a living? _____

c. What is the highest educational degree your spouse expects to receive? (circle one)

High School Junior college or Associate Bachelor's degree Master's degree M.D. degree Ph.D or equivalent

---

29. If not married,

a. Do you want to get married eventually? (circle one) ..... YES NO

b. Do you date at all, yet? (circle one) ..... YES NO

c. Do you date several different persons? (circle one) ..... YES NO

d. Do you date someone on a steady basis? (circle one) ..... YES NO

e. If you date someone regularly, what does that person plan to do for a living? _____

_____

f. If you date someone on a regular basis, what is the highest educational degree that person expects to receive?

High School Junior College or Associate Bachelor's degree Master's degree M.D. degree Ph.D or equivalent

---

30. How many years of your life do you plan to work? _____

_____

31. Why do you think you will work that long? _____

_____

_____

32. If you marry and have children, will you still work? (circle one) ..... YES NO

33. If yes, what will be your main reason for working?

_____

_____

_____

34. How many hours, on the average, do you expect to spend on the job, as compared to the Home, Family, and Recreation?

a. Time spent on Job = _____ hrs/day

b. Time spent on Home, Family, Recreation = _____ hrs/day

35. Looking to the future, if both you and your spouse are professionals and working, what percentage of the household and family responsibilities do you feel you SHOULD have to assume?

I should assume _____ %

36. What percentage of the household and family responsibilities do you think you WILL have to assume?

I will assume _____ %

37. If and when you get married or go steady, will it bother you if it turns out that the woman earns a much larger salary than the man? (circle one) a. YES
NO

b. Please explain your answer _____

_____

_____

38. If you get married, and you and your spouse get excellent job offers in two different states, what do you think you will do and why? _____

_____

_____

---

39. Rank the following in the order that they will help you the most in reaching your career goals (1 = most important and 8 = least important)

_____ charm	_____ intelligence	_____ personal attractiveness
_____ hard work	_____ social contacts	_____ knowledge
_____ supportive mate	_____ good luck	

40. Do the following persons expect you to be successful? (circle one)

Yourself	YES	NO
Mother or guardian	YES	NO
Father or guardian	YES	NO
Friends	YES	NO
Date or Spouse	YES	NO

41. How do the following persons feel about your career aspirations? (circle one each)

a. MOTHER OR GUARDIAN

strongly supportive	moderately supportive	slightly supportive	neutral	slightly non-supportive	moderately non-supportive	strongly non-supportive

b. FATHER OR GUARDIAN

strongly supportive	moderately supportive	slightly supportive	neutral	slightly non-supportive	moderately non-supportive	strongly non-supportive

c. FRIENDS

strongly supportive	moderately supportive	slightly supportive	neutral	slightly non-supportive	moderately non-supportive	strongly non-supportive

d. PERSON YOU DATE OR SPOUSE

strongly supportive	moderately supportive	slightly supportive	neutral	slightly non-supportive	moderatele non-supportive	strongly non-supportive

42. What do your parents expect of you in terms of grades in school? (circle one each)

a. MOTHER OR GUARDIAN

expects way too little of me	expects a little too little of me	expects just enough of me	expects a little too much of me	expects way too much of me

b. FATHER OR GUARDIAN

expects way too little of me	expects a little too little of me	expects just enough of me	expects a little too much of me	expects way too much of me

43. How successful a student is in school depends upon many factors. At one extreme, there are students who are just lucky (or blessed). They seem to end up in classes with all the easiest teachers or they are good at guessing on objective examinations. On the other extreme, there are students who do well, no matter what course they take, because they have exceptionally good skills and the intelligence and ability to learn almost any material. good luck doesn't really enter into it. Others do well because of a combination of ability and good luck.

Consider your own successes in school so far. In your case, have your successes in school been mainly due to good luck, mainly due to skills and abilities, or to some combination of good luck, skills and abilities? (circle one)

100% abilities	75% abilities 25% good luck	50% abilities 50% good luck	25% abilities 75% good luck	100% good luck

44. Think about the teachers who know you well. In general, do they overestimate your intellectual abilities? (circle one)

almost never	occasionally	often	almost always

45. In general, do your parents overestimate your intellectual abilities? (circle one)

a. MOTHER OR GUARDIAN

almost never | occasionally | often | almost always

b. FATHER OR GUARDIAN

almost never | occasionally | often | almost always

46. How often do you perform on tests and on papers below the standards that you set for yourself? (circle one)

almost never | occasionally | often | almost always

47. Please list the majors (or favorite subjects) of your closest school companions.

Their favorite subjects are:	Are they male or females?

48. What signs or factors will indicate to you that you have become successful in your chosen career? (list)

_____

_____

_____

49. What persons have influenced you the most in choosing a career (give sex, occupation, and relationship—if related)?

Sex	Occupation	Relationship to you

50. When you have completed your education, do you plan to return to your home community or to relocate elsewhere to participate in your career and why? _____

_____

_____

51. Name two persons in the world you most admire or respect and briefly tell why you feel as you do.

Name of person	sex	occupation	why do you admire them?

52. What are three things that please you the most? _____

_____

_____

53. What are three things that you fear the most? _____

_____

_____

54. You have just been told that you have achieved the only "A" average for the school year and that you will be presented with an award for your achievements at the annual school dance. How would you feel about this and why? _____

_____

_____

55. The following is a series of 5-point scales which describe a variety of psychological characteristics. For each one, you are to rate yourself on that characteristic. For example, how artistic are you? On the scale below very artistic is indicated at the far right and not at all artistic at the far left.

Not at all artistic A B C D E Very Artistic

If you think you are moderately artistic, your answer might be D; if you are very unartistic, you should choose A, etc.

For each scale, select the letter on the scale that best describes you and circle it.

a.	Not at all Aggressive	A ... B ... C ... D ... E ..	Very Aggressive
b.	Not at all Independent	A ... B ... C ... D ... E ...	Very Independent
c.	Not at all Emotional	A ... B ... C ... D ... E ...	Very Emotional
d.	Very Submissive	A ... B ... C ... D ... E ...	Very Dominant
e.	Not at all excitable in a Major Crisis	A ... B ... C ... D ... E ...	Very Excitable in a Major Crisis
f.	Not at all able to Devote Self Completely to Others	A ... B ... C ... D ... E ...	Able to Devote Self Completely to Others
g.	Very Rough	A ... B ... C ... D ... E ...	Very Gentle
h.	Not at all Helpful to others	A ... B ... C ... D ... E ...	Very Helpful to others
i.	Not at all Competitive	A ... B ... C ... D ... E ...	Very Competitive
j.	Very Home Oriented	A ... B ... C ... D ... E ...	Very Worldly
k.	Not at all Kind	A ... B ... C ... D ... E ...	Very Kind
l.	Indifferent to Other's Approval	A ... B ... C ... D ... E ...	Highly Needful of Other's Approval
m.	Feelings not Easily Hurt	A ... B ... C ... D ... E ...	Feelings Easily Hurt
n.	Not at all Aware of Feelings of Others	A ... B ... C ... D ... E ...	Very Aware of Feelings of Others
o.	Can make Decisions Easily	A ... B ... C ... D ... E ...	Has Difficulty Making Decisions
p.	Gives up very easily	A ... B ... C ... D ... E ...	Never gives up easily
q.	Never Cries	A ... B ... C ... D ... E ...	Cries very easily
r.	Not at all Self-Confident	A ... B ... C ... D ... E ...	Very Self-Confident
s.	Feels very Inferior	A ... B ... C ... D ... E ...	Feels very Superior
t.	Not at all Understanding of Others	A ... B ... C ... D ... E ...	Very Understanding of Others
u.	Very Cold in Relations with Others	A ... B ... C ... D ... E ...	Very Warm in Relations with Others
v.	Very little need for Security	A ... B ... C ... D ... E ...	Very strong need for Security
w.	Goes to Pieces under Pressure	A ... B ... C ... D ... E ...	Stands up well under Pressure

56. How important do you feel God or your Spiritual belief is to your success? (circle one)

extremely important	very important	important	slightly important	not important at all

---

QUESTIONS TO BE ADDED TO FOLLOW-UP QUESTIONNAIRE ONLY (YEARS TWO AND THREE)

1. Have you changed your major since last year? (circle one) YES NO

2. If you have changed your major subject since last year, why did you do this? _____

_____

_____

_____

3. Have you changed your minor subject since last year? (circle one)
YES NO NOT APPLICABLE

4. If you have changed you minor subject since last year, why did you do this? _____

_____

_____

_____

5. Have you dropped out of school since last year? (circle one) YES NO

6. If you have dropped out of school since last year, why did you do so and what are you doing now? _____

_____

_____

_____

APPENDIX B

The listing of charts contains composite information on the following groups:

1) Black Women Science (High School)
2) White Women Science (High School)
3) Black Men Science (High School)
4) White Men Science (High School)
5) Black Women Non-Science (High School)
6) White Women Non-Science (High School)
7) Cross-Sectional (Spelman, Clark, Morris Brown, Fort Valley)
8) Longitudinal

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GENERAL

TABLE 1

PARTICIPATING SCHOOLS' PROFILE

		Racial Composition			Breakdown by Sex			Income					Source of Support District					Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science
	Code	Black	White	Mixed	Coed	Women	Men	High	Med-High	Med	Low-Med	Low	Public	Private	Atlanta	Dekalb	Fulton						
College Park	06			X	X						X		X				X	6(5%)	2(3.9%)	2(2.5%)	6(9.1%)	11(13.4%)	2(4%)
Douglas	09	X			X						X		X		X			19(15.7%)	-0-	19(24.1%)	-0-	10(12.2%)	-0-
Harper	07	X			X					X			X		X			20(16.5%)	-0-	13(16.5%)	-0-	-0-	-0-
Lakeshore	02		X*		X					X			X				X	3(2.5%)	-0-	-0-	-0-	2(2.4%)	4(8%)
Marist	11		X		X			X						X		X		-0-	5(9.8%)	-0-	13(19.7%)	-0-	3(6%)
Murphy	15	X			X					X			X		X			7(5.8%)	-0-	7(8.9%)	-0-	8(9.8%)	-0-
North Springs	03		X		X					X			X				X	-0-	4(7.8%)	-0-	5(7.6%)	-0-	4(8%)
Readan	28		X*		X					X			X			X		-0-	17(33.3%)	-0-	6(9.1%)	-0-	9(18%)
Russell	05			X	X						X		X				X	6(5%)	5(9.8%)	6(7.6%)	3(4.5%)	9(11.0%)	5(10%)
Shamrock	27		X*		X					X			X			X		-0-	5(9.8%)	-0-	16(24.2%)	-0-	12(24%)
Southwest	16	X			X					X			X		X			3(2.5%)	-0-	-0-	-0-	10(12.2%)	-0-
Turner	08	X			X						X		X		X			20(16.5%)	-0-	9(11.4%)	-0-	12(14.6%)	-0-
Washington	10	X			X						X		X		X			26(21.5%)	-0-	11(13.9%)	-0-	5(6.1%)	-0-
West Fulton	14	X			X							X	X				X	9(7.4%)	-0-	11(13.9%)	-0-	15(18.3%)	-0-
Westminister (Boys)	13		X*				X	X						X			X	-0-	-0-	1(1.3%)	8(12.1%)	-0-	-0-
Westminister (Girls)	12		X*			X		X						X			X	-0-	10(19.6%)	-0-	-0-	-0-	4(8%)
Woodward Academy	17		X*		X				X					X				2(1.7%)	3(5.9%)	-0-	9(13.6%)	-0-	7(14%)

*Predominant

TABLE 2

AGE BREAKDOWN

Age	Black Women High School Science	White Women High School Science	Black Men High Sch. Science	White Men High Sch. Science	Black Women High School Non-Science	White Women High School Non-Science	Longitudinal Group	Cross-Sectional
No Age Given	-0-	-0-	-0-	-0-	-0-	-0-	-0-	2(2.9%)
16	13(10.7%)	2(3.9%)	9(11.4%)	3(4.5%)	6(7.4%)	2(4%)	-0-	-0-
*17	101(83.5%)	39(76.5%)	62(78.5%)	41(62.1%)	62(76.5%)	38(76%)	-0-	-0-
18	7(5.8%)	9(17.6%)*	8(10.1%)	22(33.3%)	12(14.8%)	10(20%)	12(22.6%)	-0-
19	-0-	1(2%)*	-0-	-0-	1(1.2%)	-0-	36(67.9%)	2(2.9%)
20	-0-	-0-	-0-	-0-	-0-	-0-	5(9.4%)	8(11.8%)
21	-0-	-0-	-0-	-0-	-0-	-0-	-0-	28(41.2%)
22	-0-	-0-	-0-	-0-	-0-	-0-	-0-	10(14.7%)
23	-0-	-0-	-0-	-0-	-0-	-0-	-0-	8(11.8%)
24	-0-	-0-	-0-	-0-	-0-	-0-	-0-	4(5.9%)
25	-0-	-0-	-0-	-0-	-0-	-0-	-0-	2(2.9%)
26	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(1.5%)
27	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
28	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
29	-0-	-0-	-0-	-0-	-0-	-0-	-0-	2(2.9%)
30	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
37	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(1.5%)

White Females slightly older

*Special Reference

TABLE 3

GEOGRAPHICAL REGIONS OF SUBJECTS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
West	1(0.8%)	4(7.8%)	-0-	1(1.6%)	-0-	1(2%)	-0-	1(1.5%)
North Central	1(0.8%)	2(3.9%)	1(1.3%)	1(1.6%)	6(7.4%)	1(2%)	2(3.7%)	12(17.9%)
Northeast	3(2.5%)	2(3.9%)	1(1.3%)	3(4.8%)	2(2.5%)	4(8%)	-0-	10(14.9%)
South	116(95.9%)	43(84.3%)	74(97.4%)	57(90.5%)	73(90.1%)	43(86%)	52(96.3%)	43(64.2%)
Other	-0-	-0-	-0-	1(1.6%)	-0-	1(2%)	-0-	1(1.5%)

TABLE 4

OCCUPATION OF PARENT

Occupation	Black Women Science		White Women Science		Black Men Science		White Men Science		Black Women Non-Science		White Women Non-Science		Longitudinal Group		Cross-Sectional	
	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father
Professional	*35(39.3%)	*20(31.7%)	*8(24.2%)	33(78.6%)	11(22.4%)	16(38.1%)	20(52.6%)	46(78%)	13(34.2%)	8(26.7%)	16(55.2%)	37(80.4%)	12(33.3%)	13(41.9%)	27(64.3%)	16(43.2%)
Clerical/Sales	*23(25.8%)	*9(14.3%)	*11(33.3%)	5(11.9%)	18(36.7%)	9(21.4%)	16(42.1%)	4(6.8%)	13(34.2%)	2(6.7%)	9(31%)	1(2.2%)	12(33.3%)	5(16.1%)	6(14.3%)	4(10.8%)
Craftsmen/Operative	10(11.2%)	*26(41.3%)	1(3%)	3(7.1%)	4(8.2%)	7(16.7%)	-0-	7(11.9%)	1(2.6%)	14(46.7%)	2(6.9%)	3(6.5%)	2(5.6%)	10(32.3%)	-0-	11(29.7%)
Farmer/Laborer	-0-	4(6.3%)	-0-	-0-	2(4.1%)	4(9.5%)	-0-	2(3.4%)	1(2.6%)	-0-	-0-	-0-	1(2.8%)	2(6.5%)	-0-	3(8.1%)
Service Workers	21(23.6%)	4(6.3%)	13(39.4%)	1(2.4%)	14(28.6%)	6(7.6%)	2(5.3%)	-0-	10(26.3%)	6(20%)	2(6.9%)	1(2.2%)	9(25.0%)	1(3.2%)	9(21.4%)	3(8.1%)

TABLE 3

EDUCATIONAL LEVEL OF PARENTS

Level Identification	Black Women Science		White Women Science		Black Men Science		White Men Science		Black Women Non-Science		White Women Non-Science		Longitudinal Group		Cross-Sectional	
	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father
Grade School 1 or 2 yrs.	-0-	-0-	-0-	1(2.1%)	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(1.8%)	-0-	-0-
Grade School 3 or 4 yrs.	1(0.9%)	1(1.0%)	-0-	-0-	-0-	-0-	1(1.6%)	-0-	-0-	-0-	1(2.1%)	-0-	-0-	1(1.8%)	-0-	2(3.3%)
Grade school 5 or 6 yrs.	1(0.9%)	2(2.1%)	-0-	-0-	-0-	1(1.6%)	-0-	-0-	-0-	3(4.8%)	-0-	-0-	1(1.8%)	-0-	-0-	4(6.7%)
Grade school 7 or 8 yrs.	1(0.9%)	3(3.1%)	2(4.1%)	-0-	4(5.3%)	2(3.1%)	-0-	1(1.7%)	4(5.1%)	5(7.9%)	-0-	1(2.1%)	2(3.6%)	3(5.5%)	6(9.7%)	2(3.3%)
High school 1 yr.	3(2.7%)	-0-	-0-	-0-	-0-	2(3.1%)	-0-	-0-	1(1.3%)	1(1.6%)	-0-	-0-	2(3.6%)	1(1.8%)	3(4.8%)	3(5%)
High school 2 yrs.	6(5.4%)	6(6.2%)	-0-	1(2.1%)	3(4.1%)	3(4.7%)	1(1.6%)	-0-	3(3.8%)	4(6.3%)	1(2.1%)	1(2.1%)	4(7.3%)	5(9.1%)	1(1.6%)	-0-
High school 3 yrs.	11(9.8%)	6(6.2%)	1(2.0%)	-0-	3(4.1%)	6(9.4%)	-0-	1(1.7%)	8(10.1%)	6(9.5%)	2(4.2%)	3(6.4%)	6(10.9%)	5(9.1%)	3(4.8%)	3(5%)
High school 4 yrs.	*51(45.5%)	47(48.5%)	12(24.5%)	5(10.6%)	31(42.5%)	23(35.9%)	14(22.6%)	6(10%)	41(51.9%)	29(4.6%)	11(22.9%)	10(21.3%)	16(29.1%)	13(23.6%)	12(14.4%)	21(35%)
College 1 yr.	6(5.4%)	4(4.1%)	6(12.2%)	2(4.3%)	5(6.8%)	2(3.1%)	1(1.6%)	4(6.7%)	1(1.3%)	3(4.8%)	2(4.2%)	1(2.1%)	2(3.6%)	2(3.6%)	2(3.2%)	-0-
College 2 yrs.	11(9.8%)	4(4.1%)	7(14.3%)	5(10.6%)	12(16.4%)	1(1.6%)	13(21%)	7(11.7%)	11(13.9%)	5(7.9%)	12(25%)	2(4.3%)	6(25.0%)	1(1.8%)	3(4.8%)	5(8.3%)
College 3 yrs.	3(2.7%)	5(5.2%)	5(10.2%)	-0-	-0-	1(1.6%)	1(1.6%)	-0-	-0-	-0-	1(2.1%)	-0-	4(16.7%)	1(1.8%)	3(4.8%)	4(6.7%)
College 4 yrs.	7(6.2%)	11(11.3%)	15(30.6%)	*17(36.2%)	7(9.6%)	15(23.4%)	14(22.6%)	21(35%)	9(11.4%)	4(6.3%)	12(25%)	18(38.3%)	6(25.0%)	9(16.4%)	15(24.2%)	4(6.7%)
Graduate school MA/MS	6(5.4%)	3(3.1%)	-0-	7(14.9%)	7(9.6%)	5(7.8%)	8(12.9%)	10(16.7%)	1(1.3%)	3(4.8%)	5(10.4%)	6(12.8%)	2(3.6%)	1(1.8%)	14(22.6%)	8(13.3%)
Graduate school M.D.	2(1.8%)	1(1.0%)	-0-	4(8.5%)	1(1.4%)	2(3.1%)	1(1.6%)	6(10%)	-0-	-0-	-0-	-0-	1(1.8%)	4(7.3%)	-0-	-0-
Graduate school Ph.D.	3(2.7%)	1(1.0%)	-0-	3(6.4%)	-0-	1(1.6%)	1(1.6%)	4(6.7%)	-0-	-0-	-0-	3(6.4%)	2(3.6%)	2(3.6%)	-0-	-0-
Graduate school other	-0-	3(3.1%)	1(2.0%)	2(4.3%)	-0-	-0-	-0-	-0-	-0-	-0-	1(2.1%)	2(4.3%)	1(1.8%)	1(1.8%)	-0-	4(6.7%)

TABLE 6

PARENTS' INCOME

	Black Women Science		White Women Science		Black Men Science		White Men Science		Black Women Non-Science		White Women Non-Science		Longitudinal Group		Cross-Sectional	
	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father
$0	6(8.0%)	3(6.2%)	12(37.5%)	-0-	9(14.8%)	1(2%)	14(33.3%)	-0-	7(15.9%)	-0-	10(38.5%)	-0-	7(12.7%)	-0-	5(9.4%)	4(8.3%)
$1-6,000	11(14.7%)	3(6.2%)	7(21.9%)	-0-	10(16.4%)	1(2%)	10(23.8%)	-0-	6(13.5%)	4(10.8%)	-0-	-0-	4(7.3%)	-0-	7(13.2%)	4(8.3%)
$ 6,001-12,000	21(28%)	7(14.6%)	6(18.7%)	1(3%)	16(26.2%)	10(20.4%)	2(4.8%)	2(4.7%)	8(18.2%)	13(35.1%)	3(11.5%)	1(4%)	9(16.4%)	8(14.5%)	10(18.9%)	3(6.2%)
$12,001-18,000	20(26.7%)	10(20.8%)	3(9.4%)	-0-	21(34.4%)	21(42.9%)	5(11.9%)	3(7%)	16(34.4%)	8(21.6%)	5(19.2%)	5(20%)	16(29.1%)	8(26.7%)	13(24.5%)	11(22.9%)
$18,001-24,000* (Black Fathers)	13(17.3%)	5(10.4%)	1(3.1%)	4(12.1%)	3(4.9%)	9(18.4%)	4(9.5%)	6(14%)	2(4.5%)	6(16.2%)	3(11.5%)	3(12%)	3(5.5%)	5(9.1%)	15(28.3%)	12(25%)
$24,001-30,000* (White Fathers)	4(5.3%)	5(10.4%)	1(3.1%)	6(18.2%)	-0-	5(10.2%)	2(4.8%)	5(11.6%)	3(6.8%)	1(2.7%)	2(7.7%)	5(20%)	1(1.8%)	5(9.1%)	2(3.8%)	6(12.5%)
$31,000-36,000* (White Fathers)	-0-	2(4.2%)	7(3.1%)	8(24.2%)	2(3.3%)	1(2%)	1(2.4%)	7(16.8%)	1(2.3%)	2(5.4%)	2(7.7%)	4(16%)	1(1.8%)	5(9.1%)	-0-	4(8.3%)
$36,001-42,000* (White Fathers)	-0-	1(2.1%)	-0-	6(18.2%)	-0-	-0-	3(7.1%)	5(11.6%)	1(2.3%)	2(5.4%)	-0-	3(12%)	-0-	-0-	1(1.9%)	1(2.0%)
$42,001 + Higher (White Fathers)	-0-	2(4.2%)	-0-	8(24.2%)	-0-	-0-	1(2.4%)	15(34.9%)	-0-	1(2.7%)	1(3.8%)	4(16%)	-0-	-0-	-0-	3(6.2%)

TABLE 7

NUMBER OF SIBLINGS

	Black Women Science		White Women Science		Black Men Science		White Men Science		Black Women Non-Science		White Women Non-Science		Longitudinal Group		Cross-Sectional	
	Brothers	Sisters	Brothers	Sisters	Brothers	Sisters	Brothers	Sisters	Brothers	Sisters	Brothers	Sisters	Brothers	Sisters	Brothers	Sisters
0	25(20.8%)	26(21.7%)	9(18%)	16(36.4%)	15(20.3%)	14(19.2%)	20(33.3%)	13(21.3%)	11(16.3%)	11(14.5%)	10(22.7%)	10(21.3%)	9(16.4%)	12(12.8%)	9(13.6%)	17(25.8%)
1	50(41.7%)	38(31.7%)	25(50%)	16(36.4%)	25(33.8%)	26(35.6%)	29(48.3%)	28(45.9%)	23(31.9%)	19(25%)	22(50%)	20(42.6%)	14(25.5%)	13(23.6%)	26(39.4%)	14(21.2%)
2	22(18.3%)	27(22.5%)	9(18%)	4(9.1%)	17(23%)	12(16.4%)	8(13.3%)	16(26.2%)	17(23.6%)	21(27.6%)	7(15.9%)	12(25.5%)	13(23.6%)	13(23.6%)	6(9.1%)	13(19.7%)
3	16(13.3%)	16(13.3%)	5(10%)	6(13.6%)	8(10.8%)	8(11%)	1(1.7%)	4(6.6%)	11(15.3%)	17(22.4%)	3(6.8%)	2(4.3%)	9(16.4%)	5(9.1%)	15(22.7%)	7(10.6%)
4	5(4.2%)	8(6.7%)	-0-	2(4.5%)	6(8.1%)	8(11%)	1(1.7%)	-0-	5(6.9%)	5(6.6%)	1(2.3%)	2(4.3%)	4(7.3%)	-0-	7(10.6%)	9(13.6%)
5	1(0.8%)	2(1.7%)	1(2%)	-0-	2(2.7%)	4(5.5%)	1(1.7%)	-0-	2(2.8%)	2(2.6%)	1(2.3%)	1(2.1%)	3(5.5%)	1(1.8%)	1(1.5%)	5(7.6%)
6	-0-	-0-	3(2.5%)	-0-	1(1.4%)	-0-	-0-	-0-	2(2.8%)	1(1.3%)	-0-	-0-	-0-	1(1.8%)	-0-	1(1.5%)
7	1(0.8%)	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(1.4%)	-0-	-0-	-0-	-0-	1(1.8%)	1(1.5%)	-0-
9 or More	-0-	-0-	-0-	-0-	-0-	1(1.4%)	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(1.5%)	-0-

TABLE 8

PERCEIVED SOCIAL CLASSES

Social Classes	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Upper Social	1(1.0%)	1(2.3%)	1(1.4%)	6(9.8%)	1(1.4%)	3(6.8%)	1(2.2%)	-0-
Upper Middle	14(13.3%)	33(76.7%)	8(11.6%)	30(49.2%)	11(15.1%)	20(45.5%)	7(15.2%)	11(17.5%)
Middle Middle	72(68.6%)	7(16.3%)	40(58%)	23(37.7%)	45(61.6%)	20(45.5%)	21(45.7%)	23(36.5%)
Lower Middle	17(16.2%)	2(4.7%)	19(27.5%)	2(3.3%)	15(20.5%)	1(2.3%)	15(32.6%)	23(36.5%)
Lower Social	1(1.0%)	-0-	1(1.4%)	-0-	1(1.4%)	-0-	2(4.3%)	6(9.5%)

TABLE 9

BIRTH ORDER

Birth Order	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st	40(33.1%)	14(28%)	27(36%)	27(45%)	16(19.8%)	21(42%)	18(32.7%)	22(33.3%)
2nd	24(19.8%)	18(36%)	21(28%)	13(21.7%)	22(27.2%)	11(22%)	10(18.2%)	13(19.7%)
3rd	23(19.0%)	7(14%)	8(10.7%)	15(25%)	12(14.8%)	10(20%)	6(10.9%)	6(9.1%)
4th	16(13.2%)	6(12%)	5(6.7%)	3(5%)	13(16%)	3(6%)	9(16.4%)	9(13.6%)
5th	6(5%)	1(2%)	8(10.7%)	-0-	10(12.3%)	1(2%)	2(3.6%)	6(9.1%)
6th	5(4.1%)	1(2%)	4(5.3%)	2(3.3%)	2(2.5%)	1(2%)	4(7.3%)	2(3%)
7th	3(2.5%)	1(2%)	1(1.3%)	-0-	3(3.7%)	2(4%)	2(3.6%)	2(3%)
8th	2(1.7%)		-0-	-0-	2(2.5%)	1(2%)	3(5.5%)	1(1.5%)
9th	2(1.7%)	1(2%)	1(1.3%)	-0-	-0-	-0-	-0-	3(4.5%)
10th	-0-	1(2%)	-0-	-0-	1(1.2%)	-0-	-0-	1(1.5%)
11th	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(1.5%)

TABLE 10

ABILITIES HELPFUL IN SCHOOL

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Internal	83(92.2%)	40(87%)	62(92.5%)	59(98.3%)	61(96.8%)	43(89.6%)	48(96.0%)	52(98.1%)
External	1(1.1%)	4(8.7%)	-0-	-0-	1(1.6%)	4(8.3%)	1(2.0%)	1(1.9%)
Religions	1(1.1%)	-0-	-0-	-0-	1(1.6%)	-0-	1(2.0%)	-0-
Uncategorizable	5(5.6%)	2(4.3%)	5(7.5%)	1(1.7%)	-0-	1(2.1%)	-0-	-0-

TABLE 11

ABILITIES HELPFUL IN SCHOOL

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Intellect	33(35.5%)	17(36.2%)	34(50.7%)	30(49.2%)	32(50.8%)	22(45.8%)	29(56.9%)	22(42.3%)
Non-Intellect	48(51.6%)	21(44.7%)	27(40.3%)	29(47.5%)	29(46%)	23(47.9%)	18(35.3%)	30(57.7%)
Uncategorizable	12(12.9%)	9(19.1%)	6(9%)	2(3.3%)	2(3.2%)	3(6.2%)	4(7.8%)	-0-

Table 12A

BRIGHTNESS VS. SAME SEX

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Much Brighter	56(48.3%)	27(54%)	35(44.9%)	38(60.3%)	29(36.3%)	19(38.8%)	26(47.3%)	29(43.3%)
Slightly Brighter	36(31%)	12(24%)	24(30.8%)	17(27%)	24(30%)	16(32.7%)	14(25.5%)	24(35.8%)
The Same	21(18.1%)	11(22%)	16(20.5%)	7(11.1%)	22(27.5%)	13(26.5%)	12(21.8%)	14(20.9%)
Slightly Less Brighter	1(0.9%)	-0-	3(3.8%)	1(1.6%)	5(6.2%)	1(2%)	2(3.6%)	-0-
Moderately-Much Less	2(1.1%)	-0-	-0-	-0-	-0-	-0-	1(1.8%)	-0-

Table 12B

BRIGHTNESS VS. OPPOSITE SEX

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Much Brighter	74(62.2%)	22(44%)	32(41%)	36(57.1%)	43(53.1%)	19(38%)	24(43.6%)	33(49.3%)
Slightly Brighter	32(26.9%)	16(32%)	16(20.5%)	17(27%)	29(35.8%)	16(32%)	14(25.5%)	19(28.4%)
The Same	11(9.2%)	9(18%)	22(28.2%)	9(14.3%)	8(9.9%)	14(28%)	14(25.5%)	13(19.4%)
Slightly Less Brighter	1(0.8%)	3(6%)	8(10.3%)	1(1.6%)	1(1.2%)	1(2%)	2(3.6%)	2(3%)
Moderately-Much Less	1(0.8%)	-0-	-0-	-0-	-0-	-0-	1(1.8%)	-0-

TABLE 13

BRIGHTNESS VS. SAME MAJOR, GPA

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Medium Brighter	36(30.3%)	7(14.3%)	27(34.6%)	15(23.8%)	25(30.9%)	10(21.3%)	12(21.8%)	21(32.3%)
Slightly Brighter	21(17.6%)	15(30.6%)	22(28.2%)	24(38.1%)	19(23.5%)	18(38.3%)	11(20.0%)	16(24.6%)
The Same	57(47.9%)	24(49%)	23(29.5%)	21(33.3%)	33(40.7%)	18(38.3%)	29(52.7%)	26(40%)
Slightly Less Brighter	4(3.4%)	3(6.1%)	6(7.7%)	3(4.8%)	4(4.9%)	1(2.1%)	2(3.6%)	2(3.1%)
Medium-Much Less	1(0.8%)	-0-	-0-	-0-	-0-	-0-	1(1.8%)	-0-

TABLE 14

WORK HARD VS. OPPOSITE SEX

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Hard	50(42%)	14(28%)	35(45.5%)	12(19%)	25(30.9%)	6(12.2%)	27(49.1%	35(52.2%)
Slightly Harder	41(34.5%)	17(34%)	18(23.4%)	23(36.5%)	19(23.5%)	23(46.9%)	17(30.9%)	15(22.4%)
The Same	20(16.8%)	16(32%)	17(22.1%)	11(17.5%)	33(40.7%)	13(26.5%)	5(9.1%)	10(14.9%)
Slightly Less	6(5%)	2(4%)	7(9.1%)	11(17.5%)	4(4.9%)	6(12.2%)	6(10.9%)	4(6%)
Moderately-Much Less	2(1.7%)	1(2%)	-0-	6(9.5%)	-0-	1(2%)	-0-	3(4.5%)

TABLE 15

WORK HARD VS. SAME SEX

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Hard	48(40.7%)	10(20.4%)	28(35.9%)	14(22.2%)	37(45.1%)	6(12.5%)	24(43.6%)	24(35.8%)
Slightly Harder	32(27.1%)	12(24.5%)	23(29.5%)	24(38.1%)	22(26.8%)	10(20.8%)	9(16.4%)	21(31.3%)
The Same	31(26.3%)	23(46.9%)	15(19.2%)	11(17.5%)	17(20.7%)	22(45.8%)	17(30.9%)	14(20.9%)
Slightly Less	6(5.1%)	3(6.1%)	12(15.4%)	10(15.9%)	5(6.1%)	9(18.7%)	4(7.3%)	7(10.4%)
Moderately-Much Less	1(0.8%)	1(2.0%)	-0-	4(6.3%)	1(1.2%)	1(2.1%)	1(1.8%)	1(1.5%)

TABLE 16

TIME, EFFORT VS. SAME MAJOR GPA

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately More	31(25.8%)	11(23.9%)	19(24.4%)	6(9.4%)	29(36.7%)	5(10.2%)	10(18.2%)	11(16.9%)
Slightly More Time	23(19.2%)	7(15.2%)	9(11.5%)	10(15.6%)	16(20.3%)	12(24.5%)	13(23.6%)	13(20%)
The Same Time	39(32.5%)	9(19.6%)	17(21.8%)	13(20.3%)	15(19%)	17(34.7%)	14(25.5%)	22(33.8%)
Slightly Less Time	25(20.8%)	15(32.6%)	29(37.2%)	20(31.2%)	17(21.5%)	12(24.5%)	17(30.9%)	18(27.7%)
Moderately Much Less	2(1.7%)	4(8.7%)	4(5.1%)	15(23.4%)	2(2.5%)	3(6.1%)	1(1.8%)	1(1.5%)

TABLE 17

MORE APT TO SPEAK UP BEFORE:

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Mostly Women	18(14.9%)	16(32%)	4(5.1%)	20(32.3%)	13(16.3%)	16(34%)	7(12.7%)	8(11.9%)
Mostly Men	5(4.1%)	2(4%)	12(15.4%)	-0-	7(8.7%)	3(6.4%)	7(12.7%)	4(6%)
Equal Women And Men	98(81%)	32(64%)	62(79.5%)	42(67.7%)	60(75%)	28(59.6%)	41(74.5%)	53(79.1%

TABLE 18

CAREER AND ATTRACTIVENESS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately More	47(41.2%)	8(16%)	29(37.2%)	12(19.4%)	37(48.1%)	9(18.4%)	13(24.1%)	26(40%)
Slightly More	25(21.9%)	21(42%)	23(29.5%)	23(37.1%)	13(16.9%)	20(40.8%)	12(22.2%)	9(13.8%)
Just As Attractive	38(33.3%)	18(36%)	25(32.1%)	27(43.5%)	24(31.2%)	19(38.8%)	24(44.4%)	27(41.5%)
Slightly Less	4(3.5%)	3(6%)	1(1.3%)	-0-	3(3.9%)	1(2%)	4(7.4%)	2(3.1%)
Moderately-Much Less	-0-	-0-	-0-	-0-	-0-	-0-	1(1.9%)	1(1.5%)

TABLE 19

FEAR OF SUCCESS OR NOT

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Fear of Success	5(4.6%)	2(4.3%)	1(1.4%)	44(74.6%)	3(4.7%)	37(84.1%)	3(5.9%)	2(3.3%)
No Fear of Success	88(81.5%)	42(89.4%)	58(79.5%)	-0-	48(75%)	-0-	45(88.2%)	52(86.7%)
Uncategorized	15(13.9%)	3(6.4%)	14(19.2%)	15(25.4%)	13(20.3%)	7(15.9%)	3(5.9%)	6(10%)

TABLE 20

HIGH SCHOOL GRADE POINT AVERAGE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
A+ or 95-99	-0-	1(2%)	-0-	-0-	-0-	-0-	-0-	1(1.8%)
A or 90-94	-0-	3(6.1%)	-0-	2(3.2%)	-0-	-0-	2(3.6%)	4(7%)
B+ or 85-89	32(28.6%)	21(42.9%)	12(15.8%)	20(32.3%)	6(8%)	17(37.8%)	19(39.6%)	22(38.6%)
B or 80-84	50(44.6%)	20(40.8%)	30(39.5%)	24(38.7%)	24(32%)	18(40%)	20(41.7%)	16(28.1%)
C+ or 75-79	19(17%)	4(8.2%)	25(32.9%)	14(22.6%)	29(38.7%)	6(13.3%)	7(14.6%)	13(22.8%)
C or 70-74	9(8%)	-0-	5(6.6%)	2(3.2%).	15(20%)	4(8.9%)	2(3.6%)	1(1.8%)
D+ or 65-69	2(1.8%)	-0-	3(3.9%)	-0-	1(1.3%)	-0-	-0-	-0-
D or 60-64	-0-	-0-	1(1.3%)	-0-	-0-	-0-	-0-	-0-
Lower Than D	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 21

SAT TEST SCORES: MATH

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
200-400	18(40%)	-0-	8(26.7%)	1(2.4%)	10(76.9%)	3(9.1%)	15(46.9%)	14(42.4%)
401-600	27(60%)	24(70.6%)	21(70%)	25(59.5%)	3(23.1%)	24(72.7%)	12(37.5%)	17(51.5%)
601-800	-0-	10(29.4%)	1(3.3%)	16(38.1%)	-0-	6(18.2%)	5(15.6%)	2(6.1%)

TABLE 22

SAT TEST SCORES: VERBAL

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
200-400	24(55.8%)	2(5.9%)	19(63.3%)	6(14%)	9(69.2%)	8(24.2%)	19(59.4%)	11(33.3%)
401-600	18(41.9%)	23(67.6%)	9(30%)	30(69.8%)	4(30.8%)	21(63.6%)	11(34.4%)	20(60.6%)
601-800	1(2.3%)	9(26.5%)	2(6.7%)	7(16.3%)	-0-	4(12.1%)	2(6.2%)	2(6.1%)

TABLE 23

PRESENT AVERAGE: MATH

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
A+ or 95-99	3(2.9%)	1(2.1%)	-0-	2(3.3%)	-0-	1(2.4%)	1(1.8%)	-0-
A or 90-94	8(7.7%)	13(27.7%)	12(17.9%)	16(26.7%)	3(5.2%)	9(21.4%)	7(12.7%)	3(5.5%)
B+ or 85-89	5(4.8%)	8(17%)	8(11.9%)	12(20%)	-0-	3(7.1%)	2(3.6%)	1(1.8%)
B or 80-84	40(38.5%)	16(34%)	23(34.3%)	20(33.3%)	19(32.8%)	18(42.9%)	16(29.1%)	21(38.2%)
C+ or 75-79	5(4.8%)	3(6.4%)	2(3.6%)	2(3.3%)	5(8.6%)	2(4.8%)	3(5.5%)	10(18.2%)
C or 70-74	37(35.6%)	4(8.5%)	22(32.8%)	7(11.7%)	28(48.3%)	8(19%)	13(23.6%)	19(34.5%)
D+ or 65-69	2(1.9%)	1(2.1%)	-0-	-0-	-0-	-0-	1(1.8%)	-0-
D or 60-64	3(2.9%)		-0-	-0-	3(5.2%)	1(2.4%)	-0-	1(1.8%)
Lower Than D	1(1.0%)	1(2.1%)	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 24

PRESENT AVERAGE: ENGLISH

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
A+ or 95-99	1(.9%)	2(4.1%)	1(1.5%)	1(1.7%)	-0-	-0-	-0-	-0-
A or 90-94	27(25.5%)	16(32.7%)	8(11.8%)	9(15%)	12(18.7%)	19(42.2%)	11(20.0%)	10(18.5%)
B+ or 85-89	7(6.6%)	5(10.2%)	4(5.9%)	8(13.3%)	7(10.9%)	4(8.9%)	3(5.5%)	4(7.4%)
B or 80-84	54(50.9%)	18(36.7%)	34(50%)	32(53.3%)	27(42.2%)	17(37.8%)	17(30.9%)	21(38.9%)
C+ or 75-79	1(.9%)	4(8.2%)	6(8.8%)	2(3.3%)	2(3.1%)	1(2.2%)	1(1.8%)	8(14.8%)
C or 70-74	13(12.3%)	3(6.1%)	12(17.6%)	7(11.7%)	15(23.4%)	4(8.9%)	10(18.1%)	11(20.4%)
D+ or 65-69	2(1.9%)	1(2%)	-0-	1(1.7%)	-0-	-0-	-0-	-0-
D or 60-64	1(.9%)	-0-	3(4.4%)	-0-	-0-	-0-	-0-	-0-
Lower Than D	-0-	-0-	-0-	-0-	1(1.6%)	-0-	1(1.8%)	-0-

TABLE 25

PRESENT AVERAGE: SCIENCE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
A+ or 95-99	1(1%)	3(8.1%)	-0-	2(3.6%)	-0-	-0-	1(1.8%)	-0-
A or 90-94	17(16.8%)	11(29.7%)	7(10.6%)	16(28.6%)	2(3.6%)	5(20.8%)	2(3.6%)	6(10.7%)
B+ or 85-89	7(6.9%)	4(10.8%)	5(7.6%)	8(14.3%)	1(1.8%)	2(8.3%)	-0-	1(1.8%)
B or 80-84	45(44.6%)	14(37.8%)	29(43.9%)	20(35.7%)	28(50%)	12(50%)	20(36.4%)	20(35.7%)
C+ or 75-79	1(1%)	1(2.7%)	2(3%)	2(3.6%)	-0-	-0-	5(9.1%)	13(23.2%)
C or 70-74	25(24.8%)	4(10.8%)	19(28.8%)	4(7.1%)	24(42.9%)	5(20.8%)	12(21.8%)	16(28.6%)
D+ or 65-69	2(2%)	-0-	1(1.5%)	2(3.6%)	-0-	-0-	-0-	-0-
D or 60-64	3(3%)	-0-	2(3%)	1(1.8%)	1(1.8%)	-0-	-0-	-0-
Lower Than D	-0-	-0-	1(1.5%)	-0-	-0-	-0-	-0-	-0-

TABLE 26

PRE-COLLEGE CURRICULUM IN H.S.?

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	49(45.0%)	40(83.3%)	27(39.1%)	45(71.4%)	19(26.8%)	31(67.4%)	26(55.3%)	38(60.3%)
No	60(55%)	8(16.7%)	42(60.9%)	18(28.6%)	52(73.2%)	15(32.6%)	21(44.7%)	25(39.7%)

TABLE 27

PLANNED MINOR COLLEGE SUBJECT

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Science-Health Minor	50(53.8%)	9(24.3%)	29(51.8%)	19(46.3%)	6(8.3%)	8(29.6%)	19(50.0%)	26(74.3%)
Non-Science Health Minor	43(46.2%)	28(75.7%)	27(48.2%)	22(53.7%)	66(91.7%)	23(70.4%)	19(50.0%)	9(25.7%)

TABLE 28

EXPECTED HIGHEST DEGREE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
High School	4(3.4%)	1(2%)	3(3.8%)	2(3.2%)	1(1.3%)	2(4.2%)	1(1.8%)	-0-
Junior College	10(8.5%)	1(2%)	4(5.1%)	2(3.2%)	24(30.4%)	(14.6%)	6(10.9%)	-0-
Bachelor's	19(16.1%)	10(20.4%)	15(19.2%)	12(19%)	18(22.8%)	21(43.7%)	5(9.1%)	2(3%)
Master's	31(26.3%)	21(42.9%)	34(43.6%)	21(33.3%)	26(32.9%)	11(22.9%)	22(40.0%)	18(27.3%)
M.D.	23(19.5%)	11(22.4%)	5(6.4%)	14(22.2%)	3(3.8%)	1(2.1%)	8(14.5%)	17(25.8%)
Ph.D.	30(25.4%)	5(10.2%)	17(21.8%)	11(17.5%)	7(8.5%)	4(8.3%)	11(20.0%)	29(43.9%)
Other	1(.8%)	-0-	-0-	1(1.6%)	-0-	2(4.2%)	-0-	-0-

TABLE 29A

THREATS TO EDUCATIONAL PLANS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	65(56.5%)	27(54%)	38(52.8%)	23(35.9%)	42(5[illegible].3%)	22(45.8%)	21(39.6%)	29(43.9%)
Intellect	6(5.2%)	1(2%)	4(5.1%)	2(3.1%)	-0-	1(2.1%)	2(3.8%	2(3%)
Non-Intellectual	41(35.7%)	21(42%)	28(38.9%)	37(57.8%)	28(38.9%)	25(52.1%)	28(52.8%)	33(50%)
Uncategorizable	3(2.6%)	1(2%)	2(2.8%)	2(3.1%)	2(2.8%)	-0-	-0-	2(3%)

TABLE 29B

THREATS TO EDUCATIONAL PLANS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	66(57.4%)	27(54%)	38(52.8%)	23(35.9%)	42(58.3%)	22(45.8%)	21(39.6%)	29(43.9%)
Internal	14(12.2%)	13(26%)	9(12.5%)	8(12.5%)	4(5.6%)	10(20.8%)	6(11.3%)	10(15.2%)
External	32(27.8%)	9(18%)	23(31.9%)	31(48.4%)	25(34.7%)	16(33.3%)	24(45.3%)	25(37.9%)
Uncategorizable	3(2.6%)	1(2%)	2(2.8%)	2(3.1%)	1(1.4%)	-0-	2(3.8%)	2(3%)

TABLE 29C

THREATS TO EDUCATIONAL PLANS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	63(54.8%)	27(54%)	38(52.8%)	22(34.9%)	42(59.2%)	22(45.8%)	20(38.5%)	29(43.9%)
Fear of Success	6(5.2%)	9(18%)	4(5.6%)	1(1.6%)	3(4.2%)	7(14.6%)	30(57.5%)	4(6.1%)
All Other Answers	46(40%)	14(28%)	30(41.7%)	40(63.5%)	26(36.6%)	19(39.6%)	2(3.8%)	33(50%)
Uncategorizable	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 30

FEELINGS TOWARD ENGLISH

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	69(58%)	31(62%)	35(44.3%)	21(33.3%)	46(56.8%)	26(52%)	32(58.2%)	36(53.7%)
Slightly Positive	23(19.3%)	7(14%)	21(26.6%)	18(28.6%)	8(9.9%)	9(18%)	9(16.4%)	14(20.9%)
Neutral	22(18.5%)	8(16%)	14(17.7%)	11(17.5%)	23(28.4%)	11(22%)	9(16.4%)	12(17.9%)
Slightly Negative	3(2.5%)	2(4%)	8(10.1%)	10(15.9%)	3(3.7%)	2(4%)	5(9.1%)	5(7.5%)
Moderately-Strongly	2(1.77%)	2(4%)	1(1.3%)	3(4.8%)	1(1.2%)	2(4%)	-0-	-0-

TABLE 31

FEELINGS TOWARD MATHEMATICS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	70(58.8%)	28(56%)	48(60.8%)	42(64.6%)	23(28.4%)	10(20%)	30(54.5%)	38(56.7%)
Slightly Positive	16(13.4%)	8(16%)	17(21.5%)	12(18.5%)	16(19.8%)	12(24%)	14(25.5%)	8(11.9%)
Neutral	20(16.8%)	10(20%)	8(10.1%)	9(13.8%)	24(29.6%)	14(28%)	9(16.4%)	13(19.4%)
Slightly Negative	12(10.1%)	2(4%)	5(6.3%)	2(3.1%)	15(18.5%)	10(20%)	1(1.8%)	8(11.9%)
Moderately-Strongly	1(.8%)	2(4%)	1(1.3%)	-0-	3(3.7%)	4(8%)	1(1.8%)	-0-

TABLE 32

FEELINGS TOWARD SCIENCE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	60(51.3%)	28(56%)	46(58.2%)	44(67.7%)	23(28.4%)	8(16.3%)	32(58.2%)	45(67.2%)
Slightly Positive	22(18.8%)	8(16%)	16(20.3%)	9(13.8%)	16(19.8%)	9(18.4%)	9(16.4%)	17(25.4%)
Neutral	22(18.8%)	10(20%)	9(11.4%)	9(13.8%)	31(38.3%)	19(38.8%)	10(18.2%)	5(7.5%)
Slightly Negative	10(8.5%)	1(2%)	7(8.9%)	3(4.6%)	8(9.9%)	9(18.4%)	3(5.5%)	-0-
Moderately-Strongly	3(2.6%)	3(6%)	1(1.3%)	-0-	3(3.7%)	4(8.2%)	1(1.8%)	-0-

TABLE 33A

PLANS FOR NEXT DECADE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Career Oriented	31(28.7%)	21(41.2%)	34(48.6%)	24(38.7%)	23(29.9%)	11(23.4%)	16(31.4%)	11(18.6%)
Marriage and Family	1(.9%)	2(3.9%)	3(4.3%)	-0-	4(5.2%)	2(4.3%)	6(11.8%)	-0-
Career and Marriage	76(70.4%)	27(52.9%)	29(41.4%)	35(56.5%)	49(63.6%)	33(70.2%)	27(52.9%)	48(81.4%)
Other Responses	-0-	1(2%)	4(5.7%)	3(4.8%)	1(1.3%)	1(2.1%)	2(3.9%)	-0-

TABLE 33B

PLANS FOR NEXT DECADE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
School Oriented	6(60%)	-0-	2(3.5%)	3(18.7%)	1(25%)	1(50%)	2(40.0%)	3(75%)
School-Family	3(30%)	1(2.9%)	2(3.5%)	2(12.5%)	-0-	1(50%)	1(20.0%)	1(25%)
Uncategorizable	1(10%)	33(97.1%)	53(93%)	11(68.7%)	3(75%)	-0-	2(40.0%)	-0-

TABLE 34

NUMBER OF YOUR CHILDREN

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0 Children	112(94.1%)	49(100%)	64(98.5%)	48(98%)	75(92.6%)	49(100%)	51(96.2%)	57(83.8%)
1 Child	7(5.9%)	-0-	1(1.5%)	1(2%)	5(6.2%)	-0-	2(3.8%)	8(11.8%)
2 Children	-0-	-0-	-0-	-0-	1(1.2%)	-0-	-0-	3(4.4%)
3 Children	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
4 or More Children	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 35

NUMBER OF CHILDREN WANTED

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0 Children	11(9.2%)	4(7.8%)	6(8.6%)	2(3.4%)	4(5.1%)	5(10%)	2(3.8%)	6(9.4%)
1 Child	11(9.2%)	1(2%)	1(1.4%)	6(10.2%)	7(8.9%)	3(6%)	5(9.4%)	5(7.8%)
2 Children	54(45%)	25(49%)	34(48.6%)	30(50.8%)	37(46.8%)	28(56%)	23(43.4%)	28(43.7%)
3 Children	22(18.3%)	12(23.5%)	16(22.9%)	14(23.7%)	17(21.5%)	10(20%)	8(15.1%)	12(18.7%)
4 or More Children	22(18.3%)	9(17.6%)	13(18.6%)	7(11.9%)	4(17.7%)	4(8%)	15(28.3%)	13(20.3%)

TABLE 36

AGE FIRST OR NEXT CHILD WANTED

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Age 16 or Younger	-0-	-0-	1(1.7%)	-0-	-0-	-0-	-0-	-0-
Ages 17-18	2(2%)	-0-	-0-	-0-	1(1.5%)	-0-	1(2.2%)	-0-
Ages 19-20	3(3.1%)	1(2.3%)	-0-	-0-	2(3%)	3(7.1%)	1(2.2%)	-0-
Ages 21-22	7(7.1%)	1(2.3%)	9(15%)	1(2.1%)	12(18.2%)	-0-	2(4.3%)	-0-
Ages 23 or Older	86(87.8%)	41(95.3%)	50(83.3%)	46(97.9%)	51(77.3%)	39(92.9%)	42(91.3%)	55(100%)

TABLE 37

TIME BETWEEN BIRTH AND WORKING

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0-1 Month	10(11.1%)	-0-	1(100%)	-0-	5(6.4%)	2(4.5%)	1(3.4%)	6(10.2%)
1-3 and 3-6 Months	53(58.8%)	12(30%)	-0-	-0-	41(52.6%)	7(15.9%)	15(51.7%)	25(42.4%)
6-12 Months	12(13.3%)	6(15%)	-0-	1(100%)	22(28.2%)	4(9.1%)	9(31.0%)	24(40.7%)
12 Months or More	13(14.4%)	22(55%)	-0-	-0-	10(12.8%)	27(61.4%)	4(13.8%)	4(6.8%)
Never	2(2.2%)	-0-	-0-	-0-	-0-	4(9.1%)	-0-	

TABLE 38

WANT TO MARRY EVENTUALLY

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	107(93%)	49(98%)	65(87.8%)	56(94.9%)	80(98.8%)	49(98%)	52(100%)	60(95.2%)
No	8(7%)	1(2%)	9(12.2%)	3(5.1%)	1(1.2%)	1(2%)	-0-	3(4.8%)

TABLE 39

DO YOU DATE AT ALL?

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	108(93.9%)	47(92.2%)	64(87.7%)	62(96.9%)	79(96.3%)	49(98%)	50(96.2%)	60(95.2%)
No	7(6.1%)	4(7.8%)	9(12.3%)	2(3.1%)	3(3.7%)	1(2%)	2(3.8%)	3(4.8%)

TABLE 40

REGULAR DATE'S PLANS FOR CAREER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Professional	61(95.3%)	13(72.2%)	21(87.5%)	15(71.4%)	34(79.1%)	13(81.2%)	28(90.3%)	33(86.8%)
Clerical and Sales	1(1.6%)	2(11.1%)	-0-	5(23.8%)	-0-	-0-	1(3.2%)	3(7.9%)
Craftsmen and Operation	1(1.6%)	3(16.7%)	1(4.2%)	1(4.8%)	2(12.5%)	2(12.5%)	2(6.5%)	2(5.3%)
Farmer and Laborer	1(1.6%)	-0-	2(8.3%)	-0-	1(6.2%)	1(6.2%)	-0-	-0-
Service Workers	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

TABLE 41

DATE'S EXPECTED HIGHEST EDUCATION

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
High School	9(12.2%)	-0-	3(7.5%)	1(3.6%)	6(12.8%)	6(37.5%)	1(1.8%)	3(6.4%)
Junior College	11(14.9%)	6(27.3%)	5(12.5%)	3(10.7%)	9(19.1%)	2(12.5%)	9(16.4%)	-0-
Bachelor's	20(27%)	4(18.2%)	13(32.5%)	12(42.9%)	13(27.7%)	5(31.2%)	7(12.7%)	10(21.3%)
Master's	31(28.4%)	7(31.8%)	15(37.5%)	8(28.6%)	10(21.3%)	2(12.5%)	11(20.0%)	13(27.7%)
M.D.	6(8.1%)	4(18.2%)	2(5%)	2(7.1%)	5(10.6%)	1(6.2%)	3(5.5%)	12(25.5%)
Ph.D.	7(9.5%)	1(4.5%)	2(5%)	2(7.1%)	4(8.5%)	-0-	4(7.3%)	9(19.1%)

TABLE 42

EXPECTED LIFETIME WORKING YEARS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
9 Years or Less	5(4.5%)	-0-	1(1.4%)	2(3.2%)	2(2.8%)	3(7.5%)	-0-	-0-
10-19 Years	4(3.6%)	5(11.1%)	1(1.4%)	1(1.6%)·	6(8.5%)	3(7.5%)	-0-	2(3%)
20-29 Years	11(9.9%)	4(8.9%)	18(25%)	5(8.1%)	8(11.3%)	6(15%)	4(7.5%)	9(13.4%)
30-39 Years	21(18.9%)	5(11.1%)	15(20.8%)	6(9.7%)	5(7%)	8(20%)	15(28.3%)	21(31.3%)
40 or More Years	70(63.6%)	31(68.9%)	37(51.4%)	48(77.4%)	50(70.4%)	20(50%)	34(64.2%)	35(52.2%)

TABLE 43

WHY EXPECT TO WORK THAT LONG

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Self-Satisfaction	58(53.7%)	34(72.3%)	28(40%)	23(37.7%)	31(44.3%)	17(42.5%)	26(51.0%)	44(71%)
For Money	23(21.3%)	5(10.6%)	21(30%)	20(32.8%)	20(28.6%)	12(30%)	11(21.6%)	14(22.6%)
For Fame	1(.9%)	-0-	-0-	1(1.6%)	-0-	-0-	-0-	-0-
Other Responses	26(24.1%)	8(17%)	21(30%)	17(27.9%)	19(27.1%)	11(27.5%)	14(27.5%)	4(6.5%)

TABLE 44

WORK IF MARRIED WITH CHILDREN

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	104(92%)	47(95.9%)	75(98.7%)	61(98.4%)	78(97.5%)	40(87%)	55(100%)	66(98.5%)
No	9(8%)	2(4.1%)	1(1.3%)	1(1.6%)	2(2.5%)	6(13%)	-0-	1(1.5%)

TABLE 45

IF YES TO 32----REASON FOR WORKING

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Self-Satisfaction	43(35.5%)	32(66.7%)	6(8%)	5(8.2%)	15(20.8%)	23(52.3%)	19(38.0%)	39(60.9%)
For Money	64(52.9%)	12(25%)	67(89.3%)	53(86.9%)	52(72.2%)	20(45.5)	30(60.0%)	23(35.9%)
For Fame	2(1.7%)	1(2.1%)	-0-	1(1.6%)	-0-	-0-	1(2.0%)	-0-
Other Responses	2(1.7%)	3(6.2%)	2(2.7%)	2(3.3%)	5(6.9%)	1(2.3%)	-0-	2(3.1%)

TABLE 46

HOURS SPENT ON THE JOB

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0-4 Hours	2(1.8%)	1(2.1%)	1(1.3%)	2(3.2%)	2(2.6%)	2(4.7%)	-0-	1(1.6%)
5-8 Hours	71(64.5%)	19(39.6%)	50(65.8%)	30(48.4%)	58(79.5%)	36(83.7%)	30(61.2%)	40(63.5%)
9-12 Hours	29(26.4%)	12(25%)	24(31.6%)	27(43.5%)	13(17.7%)	5(1.6%)	18(36.7%)	22(34.9%)
13 or More Hours	8(7.3%)	-0-	1(1.3%)	3(4.8%)	-0-	-0-	1(2.0%)	-0-

TABLE 47

HOURS SPENT ON HOME, FAMILY AND RECREATION

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0-4 Hours	1(1%)	1(2.1%)	5(7.2%)	7(12.1%)	2(3.2%)	3(7%)	4(8.2%)	2(3.3%)
5-8 Hours	26(24.8%)	19(39.6%)	15(21.7%)	20(34.5%)	14(22.6%)	11(25.6%)	15(30.6%)	21(35%)
9-12 Hours	28(26.7%)	12(25%)	12(17.4%)	7(12.1%)	9(14.5%)	5(11.6%)	7(14.3%)	12(20%)
13 or More Hours	50(47.6%)	16(33.3%)	37(53.6%)	24(41.4%)	37(59.7%)	22(51.2%)	23(46.9%)	25(41.7%)

TABLE 48

YOUR PERCENTAGE OF HOME CHORES SHOULD BE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0-25%	8(7.2%)	-0-	1(1.4%)	1(1.7%)	2(2.7%)	-0-	2(3.8%)	2(3.2%)
26-49%	13(11.7%)	1(2.1%)	4(5.8%)	7(12.1%)	5(6.8%)	-0-	2(3.8%)	8(12.9%)
50%	69(62.2%)	31(64.6%)	34(49.3%)	35(60.3%)	51(69.9%)	35(71.4%)	34(64.2%)	42(67.7%)
51-75%	9(8.1%)	14(29.2%)	20(29%)	13(22.4%)	7(9.6%)	10(20.4%)	11(20.8%)	10(16.1%)
76-100%	12(10.8%)	2(4.2%)	10(14.5%)	2(3.4%)	8(11%)	4(8.2%)	4(7.5%)	-0-

TABLE 49

YOUR PERCENTAGE OF HOME CHORES WILL BE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
0-25%	9(8.5%)	-0-	3(4.3%)	4(6.6%)	3(4.3%)	2(4.1%)	-0-	2(3.2%)
26-49%	22(20.8%)	2(9.1%)	8(11.4%)	13(21.3%)	8(11.4%)	2(4.1%)	2(3.8%)	8(12.9%)
50%	43(40.6%)	17(34.7%)	28(40%)	25(41%)	30(42.9%)	18(36.7%)	27(50.9%)	29(46.8%)
51-75%	19(17.9%)	24(49%)	17(24.3%)	14(23%)	16(22.9%)	19(38.8%)	17(32.1%)	18(29%)
76-100%	13(12.3%)	6(12.2%)	14(20%)	5(8.2%)	13(18.6%)	8(16.3%)	7(13.2%)	5(8.1%)

TABLE 50

MIND IF WOMAN'S SALARY HIGHER?

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	16(15.17%)	9(18.4%)	13(16.7%)	13(21.3%)	13(16.9%)	4(8.2%)	10(19.2%)	10(15.9%)
No	90(84.9%)	40(81.6%)	65(83.3%)	48(78.7%)	64(83.1%)	45(91.8%)	42(80.8%)	53(84.1%)

TABLE 51

WHY MIND IF HER SALARY HIGHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Fear of Success	21(20%)	12(26.1%)	9(12.7%)	13(21.3%)	9(13%)	5(10.4%)	6(12.2%)	23(40%)
Non-Fear of Success	65(61.9%)	33(71.7%)	56(78.9%)	39(63.9%)	52(75.4%)	41(85.4%)	36(73.5%)	33(58%)
Other Responses	19(18.1%)	1(2.2%)	6(8.5%)	9(14.8%)	8(11.6%)	2(4.2%)	7(14.3%)	1(1.8%)

TABLE 52

PLAN IF MATE'S JOB OUTSIDE STATE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Fear of Success	55(45.5%)	25(52.1%)	16(25%)	17(28.3%)	20(40%)	21(44.7%)	19(36.5%)	21(34.4%)
Non-Fear of Success	31(25.6%)	15(31.2%)	35(54.7%)	27(45%)	24(34.3%)	20(42.6%)	23(44.2%)	35(57.4%)
Other Responses	20(16.5%)	8(16.7%)	13(20.3%)	16(26.7%)	18(25.7%)	6(12.8%)	10(19.2%)	5(8.2%)

TABLE 53A

RANK CAREER-HELPFUL TRAITS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Intellect	57(69.5%)	21(42.9%)	33(55.9%)	27(45%)	32(60.4%)	25(55.6%)	26(56.5%)	28(50%)
Non-Intellect	24(29.3%)	28(57.1%)	26(44.1%)	3(55%)	17(32.1%)	20(44.4%)	20(43.5%)	28(50%)
Other Responses	1(1.2%)	-0-	-0-	-0-	4(7.5%)	-0-	-0-	-0-

TABLE 53B

RANK CAREER-HELPFUL TRAITS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Internal	75(93.7%)	48(96%)	57(96.6%)	55(88.7%)	47(97.9%)	43(95.6%)	43(93.5%)	50(89.3%)
External	5(6.2%)	2(4%)	2(3.4%)	7(11.3%)	1(2.1%)	2(4.4%)	3(6.5%)	6(10.7%

TABLE 54

RANK CHARM

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	-0-	1(2%)	1(1.7%)	2(3.2%)	9(13.8%)	-0-	-0-	1(1.8%)
2nd of Eight	-0-	-0-	-0-	1(1.6%)	3(4.6%)	6(13%)	-0-	-0-
3rd of Eight	3(3.6%)	2(3.9%)	1(1.7%)	2(3.2%)	1(1.5%)	-0-	-0-	-0-
4th of Eight	7(8.4%)	14(7.8%)	8(13.8%)	4(6.5%)	2(3.1%)	6(13%)	5(9.1%)	4(7.1%)
5th of Eight	13(15.7%)	13(5.9%)	6(10.3%)	12(19.4%)	10(15.4%)	9(19.6%)	5(9.1%)	7(12.5%)
6th of Eight	24(28.9%)	12(23.5%)	5(8.6%)	17(27.4%)	15(23.1%)	15(32.6%)	5(9.1%)	18(32.1%)
7th of Eight	18(21.7%)	21(41.2%)	23(39.7%)	20(32.3%)	15(23.1%)	11(23.9%)	17(30.9%)	18(32.1%)
8th of Eight	18(21.7%)	8(15.7%)	14(24.1%)	4(6.5%)	10(15.4%)	4(8.7%)	16(29.1%)	8(14.3%)

TABLE 55

RANK HARD WORK

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	22(28.6%)	26(51%)	24(40%)	29(46.8%)	31(48.4%)	20(42.6%)	16(29.1%)	20(35.7%)
2nd of Eight	23(29.9%)	12(23.5%)	13(21.7%)	12(19.4%)	8(12.5%)	9(19.1%)	10(18.2%)	10(17.9%)
3rd of Eight	25(32.5%)	10(19.6%)	16(26.7%)	12(19.4%)	14(21.9%)	13(27.7%)	13(23.6%)	16(28.6%)
4th of Eight	2(2.6%)	3(5.9%)	4(6.7%)	4(6.5%)	8(12.5%)	2(4.3%)	7(12.7%)	3(5.4%)
5th of Eight	3(3.9%)	-0-	1(1.7%)	3(4.8%)	-0-	2(4.3%)	-0-	4(7.1%)
6th of Eight	1(1.3%)	-0-	1(1.7%)	1(1.6%)	-0-	-0-	-0-	3(5.4%)
7th of Eight	1(1.3%)	-0-	1(1.7%)	-0-	2(3.1%)	-0-	1(1.8%)	-0-
8th of Eight	-0-	-0-	-0-	1(1.6%)	1(1.6%)	1(2.1%)	-0-	-0-

TABLE 56

RANK SUPPORTIVE MATE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	-0-	1(2%)	1(1.7%)	3(4.8%)	9(14.3%)	-0-	3(5.5%)	1(1.8%)
2nd of Eight	-0-	1(2%)	1(1.7%)	1(1.6%)	2(3.2%)	2(4.3%)	2(3.6%)	6(10.7%)
3rd of Eight	2(2.4%)	4(7.8%)	3(5.2%)	5(8.1%)	1(1.6%)	2(4.3%)	2(3.6%)	3(5.4%)
4th of Eight	22(26.8%)	15(29.4%)	11(19%)	17(27.4%)	4(6.3%)	16(34.8%)	12(21.8%)	9(16.1%)
5th of Eight	14(17.1%)	11(21.6%)	12(20.7%)	14(22.6%)	7(11.1%)	7(15.2%)	10(18.2%)	14(25%)
6th of Eight	25(30.5%)	8(15.7%)	17(29.3%)	6(9.7%)	11(17.5%)	5(10.9%)	7(12.7%)	13(23.2%)
7th of Eight	11(13.4%)	4(7.8%)	5(8.6%)	7(11.3%)	10(15.9%)	8(19.4%)	4(7.3%)	8(14.3%)
8th of Eight	8(9.8%)	7(13.7%)	8(13.8%)	9(14.5%)	19(30.2%)	6(13%)	7(12.7%)	2(3.6%)

TABLE 57

RANK INTELLIGENCE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	26(32.1%)	17(33.3%)	14(24.1%)	19(30.6%)	30(46.9%)	19(40.4%)	16(29.1%)	21(37.5%)
2nd of Eight	22(27.2%)	23(45.1%)	29(50%)	25(40.3%)	9(14.3%)	12(25.5%)	14(25.5%)	17(30.4%)
3rd of Eight	27(33.3%)	10(19.6%)	10(17.2%)	8(12.9%)	19(29.7%)	9(19.1%)	13(23.6%)	11(19.6%)
4th of Eight	3(3.7%)	-0-	4(6.9%)	5(8.1%)	2(3.1%)	4(8.5%)	3(5.5%)	4(7.1%)
5th of Eight	-0-	1(2%)	-0-	2(3.2%)	2(3.1%)	1(2.1%)	1(1.8%)	-0-
6th of Eight	2(2.5%)	-0-	-0-	1(1.6%)	1(1.6%)	1(2.1%)	-0-	2(3.6%)
7th of Eight	-0-	-0-	-0-	1(1.6%)	-0-	1(2.1%)	-0-	1(1.8%)
8th of Eight	1(1.2%)	-0-	1(1.7%)	1(1.6%)	1(1.6%)	-0-	-0-	-0-

TABLE 58

RANK SOCIAL CONTACTS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	4(5.1%)	1(2%)	-0-	4(6.3%)	10(15.9%)	2(4.3%)	-0-	2(3.6%)
2nd of Eight	2(2.6%)	-0-	1(1.7%)	3(4.8%)	4(6.3%)	1(2.2%)	3(5.5%)	4(7.1%)
3rd of Eight	6(7.7%)	1(2%)	3(5.2%)	5(7.9%)	6(9.5%)	4(8.7%)	3(5.5%)	10(17.9%)
4th of Eight	26(33.3%)	15(29.4%)	22(37.9%)	14(22.2%)	17(27%)	8(17.4%)	6(10.9%)	20(35.7%)
5th of Eight	19(24.4%)	13(25.5%)	14(24.1%)	17(27%)	8(12.7%)	14(30.4%)	17(30.9%)	13(23.2%)
6th of Eight	12(15.4%)	12(23.5%)	11(19%)	14(22.2%)	8(12.7%)	7(15.2%)	13(23.6%)	3(5.4%)
7th of Eight	6(7.7%)	7(13.7%)	4(6.9%)	5(7.9%)	5(6.1%)	6(13%)	2(3.6%)	4(7.1%)
8th of Eight	3(3.8%)	2(3.9%)	3(3.8%)	1(1.6%)	5(6.1%)	-0-	3(5.5%)	-0-

TABLE 59

RANK GOOD LUCK

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	3(3.7%)	-0-	1(1.7%)	5(7.9%)	8(12.5%)	-0-	-0-	3(5.4%)
2nd of Eight	1(1.2%)	1(2%)	2(3.4%)	-0-	1(1.6%)	1(2.1%)	-0-	1(1.8%)
3rd of Eight	1(1.2%)	-0-	1(1.7%)	3(4.8%)	2(3.1%)	3(6.4%)	-0-	2(3.6%)
4th of Eight	6(7.4%)	7(14.3%)	3(5.2%)	6(9.5%)	3(4.7%)	1(2.1%)	5(9.1%)	1(1.8%)
5th of Eight	10(12.3%)	10(20.4%)	7(12.1%)	5(7.9%)	8(12.5%)	4(8.5%)	8(14.5%)	2(3.6%)
6th of Eight	6(7.4%)	6(12.2%)	9(15.5%)	11(17.5%)	11(17.2%)	3(6.4%)	10(18.2%)	7(12.5%)
7th of Eight	21(25.9%)	4(8.2%)	11(19%)	7(11.1)	7(10.9%)	10(21.3%)	10(18.2%)	2(3.6%)
8th of Eight	33(40.7%)	21(42.9%)	24(41.4%)	26(41.3%)	24(37.5%)	25(53.2%)	14(25.5%)	38(67.9%)

TABLE 60

RANK PERSONAL ATTRACTIVENESS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	-0-	1(2%)	-0-	1(1.6%)	9(14.1%)	1(2.1%)	1(1.8%)	-0-
2nd of Eight	7(8.6%)	-0-	4(6.9%)	2(3.2%)	3(4.7%)	1(2.1%)	-0-	-0-
3rd of Eight	1(1.2%)	2(3.9%)	3(5.2%)	2(3.2%)	3(4.7%)	3(6.4%)	2(3.6%)	1(1.8%)
4th of Eight	6(7.4%)	2(3.9%)	1(1.7%)	4(6.5%)	13(20.3%)	4(8.5%)	7(12.7%)	2(3.6%)
5th of Eight	12(14.8%)	10(19.6%)	16(27.6%)	8(12.9%)	12(18.7%)	10(21.3%)	5(9.1%)	14(25%)
6th of Eight	9(11.1%)	12(23.5%)	16(27.6%)	10(16.1%)	4(6.2%)	10(21.3%)	13(23.6%)	10(17.9%)
7th of Eight	29(35.8%)	13(25.5%)	10(17.2%)	18(29%)	7(10.9%)	11(23.4%)	10(18.2%)	22(39.3%)
8th of Eight	17(21%)	11(21.6%)	8(13.8%)	17(27.4%)	13(20.3%)	7(14.9%)	8(14.5%)	7(12.5%)

TABLE 61

RANK KNOWLEDGE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	26(32.1%)	9(17.6%)	19(32.2%)	9(14.5%)	32(49.2%)	8(17%)	11(20.0%)	8(14.3%)
2nd of Eight	26(32.1%)	14(27.5%)	13(22%)	18(29%)	24(36.9%)	19(40.4%)	18(32.7%)	18(32.1%)
3rd of Eight	13(16%)	22(43.1%)	20(33.9%)	24(38.7%)	5(7.7%)	13(27.7%)	15(27.3%)	14(25%)
4th of Eight	5(6.2%)	5(9.8%)	4(6.8%)	6(9.7%)	1(1.5%)	3(6.4%)	2(3.6%)	13(23.2%)
5th of Eight	6(7.4%)	1(2%)	2(3.4%)	1(1.6%)	1(1.5%)	-0-	1(1.8%)	2(3.6%)
6th of Eight	5(6.2%)	-0-	1(1.7%)	2(3.2%)	1(1.5%)	2(4.3%)	-0-	-0-
7th of Eight	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
8th of Eight	-0-	-0-	-0-	2(3.2%)	1(1.5%)	2(4.3%)	-0-	1(1.8%)

TABLE 62

SUCCESS EXPECTED BY YOURSELF

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	114(94.2%)	47(97.9%)	76(100%)	63(100%)	80(98.8%)	49(100%)	53(98.1%)	65(98.5%)
No	1(.9%)	1(2.1%)	-0-	-0-	1(1.2%)	-0-	1(1.9%)	1(1.5%)

TABLE 63

SUCCESS EXPECTED BY MOTHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	99(95.2%)	46(95.8%)	72(96%)	61(96.8%)	80(100%)	47(97.9%)	54(100%)	64(98.5%)
No	5(4.8%)	2(4.2%)	3(4%)	2(3.2%)	-0-	1(2.1%)	-0-	1(1.5%)

TABLE 64

SUCCESS EXPECTED BY FATHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	98(98%)	47(95.9%)	66(93%)	59(96.7%)	65(95.6%)	45(95.7%)	42(97.7%)	58(95.1%)
No	2(2%)	2(4.1%)	5(7%)	2(3.3%)	3(4.4%)	2(4.3%)	1(2.3%)	3(4.9%)

TABLE 65A

SUCCESS EXPECTED BY FRIENDS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	106(93.8%)	47(97.9%)	68(94.4%)	56(91.8%)	66(85.7%)	43(91.5%)	52(98.1%)	65(97%)
No	7(6.2%)	1(2.1%)	4(5.6%)	5(8.2%)	11(14.3%)	4(8.5%)	1(1.9%)	2(3%)

TABLE 65B

SUCCESS EXPECTED BY DATE, MATE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	105(97.2%)	47(97.9%)	66(95.7%)	56(98.2%)	75(98.7%)	39(92.9%)	49(100%)	64(98.5%)
No	3(6.2%)	1(2.1%)	3(4.3%)	1(1.8%)	1(1.3%)	3(7.1%)	-0-	1(1.5%)

TABLE 66A

CAREER-PLANS SUPPORT BY MOTHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	101(91.8%)	41(83.7%)	67(89.3%)	52(82.5%)	73(90.1%)	38(77.6%)	49(90.7%)	59(90.5%)
Slightly Supportive	4(3.6%)	3(6.1%)	7(9.3%)	7(11.1%)	3(3.7%)	3(6.1%)	2(3.7%)	3(4.8%)
Neutral	4(3.6%)	2(4.1%)	1(1.3%)	-0-	4(4.9%)	6(12.2%)	3(5.6%)	1(1.6%)
Slightly Negative	1(.9%)	2(4.1%)	-0-	4(6.3%)	-0-	2(4.1%)	-0-	2(3.2%)
Moderately-Strongly	-0-	1(2%)	-0-	-0-	1(1.2%)	-0-	-0-	-0-

TABLE 66B

CAREER-PLANS SUPPORT BY FATHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	81(80.2%)	40(81.6%)	55(83.3%)	47(77%)	51(76.1%)	38(80.9%)	37(82.2%)	44(75.9%)
Slightly Supportive	4(3.6%)	3(6.1%)	3(4.5%)	7(11.5%)	7(10.4%)	3(6.4%)	4(8.9%)	5(8.6%)
Neutral	4(3.6%)	2(4.1%)	5(7.6%)	4(6.6%)	7(10.4%)	6(12.8%)	2(4.4%)	5(8.6%)
Slightly Negative	1(.9%)	2(4.1%)	1(1.5%)	3(4.9%)	-0-	-0-	1(2.2%)	2(3.4%)
Moderately-Strongly	-0-	1(2%)	2(3%)	-0-	2(3%)	-0-	1(2.2%)	2(3.4%)

TABLE 67A

CAREER-PLANS SUPPORT BY FRIENDS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	79(68.1%)	33(66%)	38(52.1%)	30(47.6%)	40(49.4%)	28(57.1%)	35(64.8%)	41(63.1%)
Slightly Positive	16(13.8%)	9(18%)	18(24.7%)	11(17.5%)	10(12.3%)	8(16.3%)	8(14.8%)	8(12.3%)
Neutral	20(17.2%)	8(16%)	16(21.9%)	20(31.7%)	25(30.9%)	13(26.5%)	10(18.5%)	15(23.1%)
Slightly Negative	1(.9%)	-0-	1(1.4%)	2(3.2%)	4(4.9%)	-0-	1(1.9%)	1(1.5%)
Moderately-Strongly	-0-	-0-	-0-	-0-	2(2.5%)	-0-	-0-	-0-

TABLE 67B

CAREER-PLANS SUPPORT BY MATE, DATE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Strongly-Moderately	87(80.6%)	28(65.1%)	56(81.2%)	42(71.2%)	64(83.1%)	30(69.8%)	41(82.0%)	51(79.7%)
Slightly Positive	16(13.8%)	9(18%)	6(8.7%)	8(13.6%)	2(2.6%)	2(4.7%)	2(4.0%)	8(12.5%)
Neutral	20(17.2%)	8(16%)	7(10.1%)	9(15.3%)	10(13%)	10(23.3%)	6(12.0%)	4(6.2%)
Slightly Negative	1(.9%)	-0-	-0-	-0-	-0-	1(2.3%)	1(2.0%)	1(1.6%)
Moderately-Strongly	-0-	-0-	-0-	-0-	1(1.3%)	-0-	-0-	-0-

TABLE 68A

SCHOOL-GRADES EXPECTED BY MOTHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Way Too Little	2(1.9%)	2(4.2%)	6(8%)	1(1.6%)	3(3.7%)	3(6.4%)	6(11.3%)	3(4.8%)
A Little Too Little	4(3.7%)	1(2.1%)	2(2.7%)	1(1.6%)	3(3.7%)	4(8.5%)	-0-	8(12.7%)
Expects Just Enough	72(66.7%)	34(70.8%)	38(50.7%)	39(60.9%)	49(61.3%)	26(55.3%)	39(73.6%)	34(54%)
A Little Too Much	24(22.2%)	11(22.9%)	23(30.7%)	18(28.1%)	21(26.3%)	12(25.5%)	8(15.1%)	12(19%)
Expects Way Too Much	6(5.6%)	-0-	-0-	5(7.8%)	4(5%)	2(4.3%)	-0-	6(9.5%)

TABLE 68B

SCHOOL-GRADES EXPECTED BY FATHER

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Way Too Little	5(5.0%)	1(2.1%)	5(7.7%)	1(1.6%)	4(6%)	2(4.3%)	7(16.3%)	4(7%)
A Little Too Little	6(5.9%)	1(2.1%)	1(1.5%)	2(3.2%)	1(1.5%)	4(8.5%)	2(4.7%)	8(14%)
Expects Just Enough	57(56.4%)	34(70.8%)	37(56.9%)	35(56.5%)	46(68.7%)	29(61.7%)	24(55.8%)	31(54.4%)
A Little Too Much	24(23.8%)	7(14.6%)	17(26.2%)	21(33.9%)	12(17.9%)	10(21.3%)	6(14.0%)	10(17.5%)
Expects Way Too Much	9(8.9%)	5(10.4%)	5(7.7%)	3(4.8%)	4(6%)	2(4.3%)	4(9.3%)	4(7%)

TABLE 69

SUCCESS DUE TO LUCK OR SKILLS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
100% Abilities	20(17.9%)	3(6%)	18(24.7%)	10(15.6%)	9(12%)	3(6.2%)	13(24.1%)	5(7.4%)
75% Abilities	63(56.2%)	36(72%)	49(67.1%)	50(78.1%)	40(53.3%)	38(79.2%)	33(61.1%)	44(72.1%)
50% Abilities	25(22.3%)	11(22%)	4(5.5%)	3(4.7%)	24(32%)	7(14.6%)	8(14.8%)	12(17.6%)
25% Abilities	2(1.8%)	-0-	1(1.4%)	1(1.6%)	2(2.7%)	-0-	-0-	1(1.5%)
100% Good Luck	2(1.8%)	-0-	1(1.4%)	-0-	-0-	-0-	-0-	1(1.5%)

TABLE 70A

INTELLECT OVERRATED BY TEACHERS?

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	30(28%)	13(26%)	20(26.7%)	15(23.4%)	17(21.5%)	7(14.6%)	15(28.8%)	22(32.4%)
Occasionally	49(45.8%)	32(64%)	27(36%)	47(73.4%)	39(49.4%)	38(79.2%)	28(53.8%)	33(48.5%)
Often	22(20.6%)	4(8%)	22(29.3%)	2(3.1%)	17(21.5%)	2(4.2%)	8(15.4%)	10(14.7%)
Almost Always	6(5.6%)	1(2%)	6(8%)	-0-	6(7.6%)	1(2.1%)	1(1.9%)	3(4.4%)

TABLE 70B

INTELLECT OVERRATED BY MOTHER?

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	35(32.1%)	20(41.7%)	20(26.7%)	22(34.9%)	27(35.1%)	20(40.8%)	27(50.0%)	27(42.9%)
Occasionally	48(44%)	22(45.8%)	27(36%)	33(52.4%)	24(31.2%)	21(42.9%)	22(40.7%)	21(33.3%)
Often	18(16.5%)	4(8.3%)	22(29.3%)	8(12.7%)	14(18.2%)	7(14.3%)	3(5.6%)	10(15.9%)
Almost Always	8(7.3%)	2(4.2%)	6(8%)	-0-	12(15.6%)	1(2%)	2(3.7%)	5(7.9%)

TABLE 71

INTELLECT OVERRATED BY FATHER?

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	25(27.2%)	20(41.7%)	17(26.2%)	25(41.7%)	22(35.5%)	21(44.7%)	20(45.5%)	29(50%)
Occasionally	41(44.6%)	15(31.2%)	26(40%)	29(48.3%)	21(33.9%)	18(38.3%)	18(40.9%)	15(25.9%)
Often	17(18.5%)	10(20.8%)	18(27.7%)	6(10%)	12(19.4%)	6(12.8%)	2(4.5%)	11(19%)
Almost Always	9(9.8%)	3(6.2%)	4(6.2%)	-0-	7(11.3%)	2(4.3%)	4(9.1%)	3(5.2%)

TABLE 72

TEST-RESULTS BELOW YOUR NORMS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	22(20.6%)	10(20%)	12(16.4%)	11(17.5%)	10(13.7%)	7(14.3%)	10(19.6%)	8(12.5%)
Occasionally	61(57%)	27(54%)	39(53.4%)	40(63.5%)	39(53.4%)	34(69.4%)	27(52.9%)	43(67.2%)
Often	17(15.9%)	11(22%)	20(27.4%)	10(15.9%)	17(23.3%)	8(16.3%)	11(21.6%)	12(18.7%)
Almost Always	7(6.5%)	2(4%)	2(2.7%)	2(3.2%)	7(9.6%)	-0-	3(5.9%)	1(1.6%)

TABLE 73A

MAJORS OF BEST SCHOOL FRIENDS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Male	27(27.6%)	11(22.9%)	37(64.9%)	39(83%)	18(26.1%)	11(25%)	19(39.6%)	11(19.3%)
Female	71(72.4%)	37(77.1%)	20(35.1%)	8(17%)	51(73.9%)	33(75%)	29(60.4%)	46(80.7%)

TABLE 73B

MAJORS OF BEST SCHOOL FRIENDS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Same Sex	72(75%)	35(72.9%)	35(61.4%)	38(82.6%)	49(71%)	29(74.4%)	23(48.9%)	45(80.4%)
Opposite Sex	24(25%)	13(27.1%)	22(38.6%)	8(17.4%)	20(29%)	10(25.6%)	24(51.1%)	11(19.6%)

TABLE 74

MAJORS OF BEST SCHOOL FRIENDS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Science-Health Major	51(52%)	24(49%)	41(65.1%)	34(64.2%)	27(38.6%)	15(34.9%)	29(59.2%)	40(66.7%)
Non-Science Health	46(46.9%)	21(42.9%)	20(31.7%)	14(26.4%)	40(57.1%)	24(55.8%)	20(40.8%)	20(33.3%)
Other Responses	1(1%)	4(8.2%)	2(3.2%)	5(9.4%)	3(14.3%)	4(9.3%)	-0-	-0-

TABLE 75

SIGNS OF CAREER SUCCESS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Self-Satisfaction	56(62.2%)	34(69.4%)	21(38.2%)	33(53.2%)	34(64.2%)	27(61.4%)	32(69.6%)	40(69%)
Money or Possessions	14(15.6%)	8(16.3%)	20(26.4%)	16(25.8%)	5(9.4%)	14(27.3%)	7(15.2%)	9(15.5%)
Fame	10(11.1%)	6(12.2%)	5(9.1%)	5(8.1%)	5(9.4%)	5(11.4%)	5(10.9%)	8(13.8%)
Other Responses	10(11.1%)	1(2%)	9(16.4%)	8(12.9%)	9(17%)	-0-	2(4.3%)	1(1.7%)

TABLE 76A

INFLUENTIALS IN CAREER CHOICE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Male	25(25.8%)	20(45.5%)	33(58.9%)	48(87.3%)	13(19.4%)	18(40.9%)	20(40.0%)	17(33.3%)
Female	72(74.2%)	24(54.5%)	23(41.1%)	7(12.7%)	54(80.6%)	26(59.1%)	30(60.0%)	34(66.7%)

TABLE 76B

INFLUENTIALS IN CAREER CHOICE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Parent or Guardian	41(41.9%)	18(41.9%)	24(44.4%)	36(65.5%)	26(39.4%)	21(47.7%)	23(46.0%)	16(31.4%)
Sibling	10(10.1%)	2(4.7%)	4(7.4%)	3(5.5%)	12(18.2%)	-0-	3(6.0%)	1(2%)
Teacher, Counselor	15(15.2%)	10(23.3%)	13(24.1%)	5(9.1%)	7(10.6%)	-0-	8(16.0%)	16(31.4%)
Other	33(33.3%)	13(30.2%)	13(24.1%)	11(20%)	21(31.8%)	12(27.3%)	161(32.0%)	17(33.3%)
Minister	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1(2.0%)

TABLE 76C

INFLUENTIALS IN CAREER CHOICE

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Science-Health Occupation	27(27.8%)	15(35.7%)	18(34.6%)	21(39.6%)	12(17.9%)	4(9.3%)	11(22.0%)	16(30.8%)
Non-Science Health	54(55.7%)	15(35.7%)	29(55.8%)	25(47.2%)	38(56.7%)	29(67.4%)	29(58.0%)	27(51.9%)
Housewife	6(6.2%)	5(11.9%)	4(7.7%)	1(1.9%)	8(11.9%)	5(11.6%)	3(6.0%)	1(1.9%)
Other Responses	10(10.3%)	7(16.7%)	1(1.9%)	6(11.3%)	9(13.4%)	5(11.6%)	7(14.0%)	8(15.4%)

TABLE 77

AFTER SCHOOL'S OVER, GOING HOME

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Return Home	36(33.3%)	15(34.9%)	21(38.2%)	17(31.5%)	23(39.7%)	16(38.1%)	23(46.0%)	20(34.5)
Relocate Elsewhere	45(41.7%)	24(55.8%)	27(49.1%)	26(48.1%)	25(43.1%)	16(38.1%)	15(30.0%)	31(53.4%)
Other Responses	27(25%)	4(9.3%)	7(12.7%)	11(20.4%)	10(17.2%)	10(23.8%)	12(24.0%)	7(12.1%)

TABLE 78A

MOST ADMIRED PERSON, AND WHY

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Male	23(23%)	21(47.7%)	32(60.4%)	34(66.7%)	25(39.1%)	21(52.5%)	15(31.9%)	17(32.1%)
Female	77(77%)	23(52.3%)	21(39.6%)	17(33.3%)	39(60.9%)	19(47.5%)	32(68.1%)	36(67.9%)

TABLE 78B

MOST ADMIRED PERSON, AND WHY

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Science-Health Occupations	12(13%)	8(21.1%)	12(26.7%)	11(27.5%)	12(23.1%)	5(12.8%)	8(19.0%)	6(12.2%)
Non-Science Health	62(67.4%)	23(60.5%)	30(66.7%)	24(60%)	30(57.7%)	27(69.2%)	28(66.7%)	34(69.4%)
Housewife, Unemployed	18(19.6%)	7(18.4%)	3(6.7%)	5(12.5%)	10(19.2%)	6(15.4%)	6(14.3%)	9(18.4%)
Other Responses	-0-	-0-	-0-	-0-	-0-	1(2.6%)	-0-	-0-

TABLE 78C

MOST ADMIRED PERSON AND WHY

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Intellectual Factors	8(8.5%)	7(19.4%)	9(17.6%)	6(12.2%)	10(15.6%)	11(26.8%)	5(10.6%)	6(11.3%)
Achievements	12(12.8%)	5(13.9%)	4(7.8%)	13(26.5%)	8(12.5%)	5(12.2%)	8(17.0%)	9(17%)
Motivation, Work	20(21.3%)	13(36.1%)	13(25.5%)	8(16.3%)	15(23.4%)	12(29.3%)	9(19.1%)	17(32.1%)
Good Relations	54(57.4%)	11(30.6%)	23(45.1%)	17(34.7%)	31(48.4%)	11(26.8%)	25(53.2%)	21(39.6%)
Rich, Money	-0-	-0-	2(3.9%)	5(10.2%)	-0-	2(4.9%)	-0-	-0-

TABLE 79A

THREE THINGS MOST PLEASING

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Internal	40(45.5%)	24(48%)	27(51%)	32(51.6%)	29(41.4%)	25(50%)	31(63.3%)	35(61.4%)
External	45(51.1%)	25(50%)	15(28.8%)	26(41.9%)	25(35.7%)	20(40%)	14(28.6%)	16(28.1%)
Religious	3(3.4%)	-0-	1(1.9%)	2(3.2%)	4(5.7%)	2(4%)	2(4.1%)	2(3.5%)
Other Responses	-0-	1(2%)	9(17.3%)	2(3.2%)	12(17.1%)	3(6%)	2(4.1%)	4(7%)

TABLE 79B

FEELINGS ABOUT PUBLIC AWARD

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Did Deserve It	77(79.4%)	35(71.4%)	17(51.5%)	43(69.4%)	51(77.3%)	37(82.2%)	43(89.6%)	45(76.3%)
Did Not Deserve It	11(11.3%)	8(16.3%)	4(12.1%)	3(4.8%)	5(7.6%)	3(6.7%)	-0-	-0-
Other Responses	9(9.3%)	6(12.2%)	12(36.4%)	16(25.8%)	10(15.2%)	5(11.1%)	5(10.4%)	14(23.7%)

TABLE 80A

FEELINGS ABOUT PUBLIC AWARDS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Fear of Success	8(8.1%)	15(30.6%)	5(10.2%)	11(17.7%)	6(8.8%)	10(21.3%)	8(16.3%)	9(15%)
No Fear of Success	89(89.9%)	33(67.3%)	41(83.7%)	47(75.8%)	61(89.7%)	36(76.6%)	41(83.7%)	50(83.3%)
Other Responses	2(2%)	1(2%)	3(6.1%)	4(6.5%)	1(1.5%)	1(2.1%)	-0-	1(1.7%)

TABLE 80B

THREE THINGS FEARED MOST

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Personal Problems	30(35.7%)	30(62.5%)	9(21.4%)	24(40%)	24(38.7%)	15(31.9%)	23(45.1%)	27(47.4%)
Violence to Self	39(46.4%)	17(35.4%)	25(59.5%)	27(45%)	32(51.6%)	28(59.6%)	23(45.1%)	23(40.4%)
Nothing Not Applicable	6(7.1%)	-0-	4(9.5%)	3(5%)	-0-	3(6.4%)	-0-	2(3.5%)
Religious	7(8.3%)	1(2.1%)	2(4.8%)	1(1.7%)	-0-	-0-	5(9.8%)	4(7%)
Other	-0-	-0-	2(4.8%)	5(8.3%)	6(9.7%)	1(2.1%)	-0-	1(1.8%)

TABLE 81

GOD'S IMPORTANCE TO SUCCESS

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Extremely Important	55(58.5%)	17(36.2%)	14(31.1%)	17(29.3%)	38(64.4%)	13(30.2%)	32(69.6%)	37(60.7%)
Very Important	18(19.1%)	10(21.3%)	19(42.2%)	17(29.3%)	15(25.4%)	9(20.9%)	10(21.7%)	14(23%)
Important	19(20.2%)	13(27.7%)	7(15.6%)	10(17.2%)	3(5.1%)	10(23.3%)	4(8.7%)	8(13.1%)
Slightly Important	2(2.1%)	5(10.6%)	1(2.2%)	8(13.8%)	3(5.1%)	9(20.9%)	-0-	2(3.3%)
Not Important At All	-0-	2(4.3%)	4(8.9%)	6(10.3%)	-0-	2(4.7%)	-0-	

TABLE 82

PERSON MOST ADMIRED

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Parent or Guardian	32(32.7%)	-0-	-0-	19(61.3%)	24(40%)	1(12.5%)	31(72.1%)	26(52%)
Teacher, Counselor	12(12.2%)	-0-	-0-	3(9.7%)	7(11.7%)	2(25.0%)	3(7.0%)	5(10%)
Other	54(55.1%)	-0-	-0-	7(22.6%)	27(45%)	5(62.5%)	1(2.3%)	3(6%)
Minister	-0-	-0-	-0-	2(6.5%)	-0-	-0-	8(18.6%)	14(28%)
Sibling	-0-	-0-	-0-	-0-	2(3.3%)	-0-	-0-	2(4%)

FEAR OF SUCCESS

TABLE 1

PLAN IF MATE'S JOB OUTSIDE STATE
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Fear of Success	44(53.7)	21(52.5)	14(24.1)	14(28.0)	20(43.5)	17(42.5)	15(34.1)	16(34.0)
Non-Fear of Success	23(28.0)	14(35.0)	33(56.9)	24(48.0)	14(30.4)	17(42.5)	21(47.7)	26(55.3)
Other Responses	15(18.3)	5(12.5)	11(19.0)	12(24.0)	12(26.1)	6(15.0)	8(18.2)	5(10.6)

TABLE 2

THREATS TO EDUCATIONAL PLANS
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	50(57.5)	19(47.5)	32(50.8)	19(37.3)	29(56.9)	16(41.0)	16(38.1)	18(36.7)
Internal	12(13.8)	12(30.0)	7(11.1)	6(11.8)	4(7.8)	9(23.1)	6(14.3)	10(20.4)
External	22(25.3)	8(20.0)	22(34.9)	25(49.0)	18(35.3)	14(35.9)	18(42.9)	20(40.8)
Uncategorizable	3(3.4)	1(2.5)	2(3.2)	1(2.0)	-0-	-0-	2(4.8)	1(2.0)

TABLE 3

THREATS TO EDUCATIONAL PLANS
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	48(55.2)	19(47.5)	32(50.8)	19(37.3)	29(56.9)	16(41.0)	15(36.6)	18(36.7)
Fear of Success	6(6.9)	9(22.5)	3(4.8)	1(2.0)	3(5.9)	6(15.4)	2(4.9)	4(8.2)
All Other Answers	33(37.9)	12(30.0)	28(44.4)	31(60.8)	19(37.3)	17(43.6)	24(58.5)	27(55.1)

TABLE 4

THREATS TO EDUCATIONAL PLANS
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	49(57.0)	19(47.5)	32(50.8)	19(37.3)	29(56.9)	16(41.0)	16(38.1)	18(36.7)
Intellect	6(7.0)	1(2.5)	4(6.3)	2(3.9)	-0-	1(2.6)	2(4.8)	2(4.1)
Non-Intellect	28(32.6)	19(47.5)	25(39.7)	29(56.9)	21(41.2)	22(56.4)	22(52.4)	28(57.1)
Uncategorizable	3(3.5)	1(2.5)	2(3.2)	1(2.0)	1(2.0)	-0-	2(4.8)	1(2.0)

TABLE 5

MORE APT TO SPEAK UP BEFORE
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Group: Mostly Women	12(13.3)	13(31.7)	3(4.5)	18(34.6)	7(13.2)	13(31.7)	5(11.4)	4(8.2)
Group: Mostly Men	4(4.4)	1(2.4)	10(14.9)	-0-	6(11.3)	3(7.3)	6(13.6)	6(12.2)
Equal Women and Men	74(82.2)	27(65.9)	54(80.6)	34(65.4)	40(75.5)	25(61.0)	33(75.0)	39(79.6)

TABLE 6

CAREER AND ATTRACTIVENESS
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately More	38(42.2)	7(17.1)	26(38.8)	10(19.2)	29(54.7)	9 (22.0)	9(20.5)	19(38.8)
Slightly More	20(22.2)	18(34.9)	16(23.9)	20(40.4)	8(15.1)	17(41.5)	10(22.7)	9(18.4)
Just As Attractive	30(33.3)	13(31.7)	24(35.8)	21(40.4)	14(26.4)	14(34.1)	21(47.7)	18(36.7)
Slightly Less	2(2.2)	3(7.3)	1(1.5)	-0-	2(3.8)	1(2.4)	3(6.8)	2(4.1)
Much Less	-0-	-0-	-0-	-0-	-0-	-0-	1(2.3)	1(2.0)

TABLE 7

FEAR OF SUCCESS
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Fear of Success	3(3.3)	2(4.9)	1(1.5)	-0-	2(3.8)	35(85.4)	3(6.8)	2(4.1)
No Fear of Success	74(82.2)	36(87.8)	53(79.1)	39(75.0)	39(13.6)	-0-	38(86.4)	45(91.8)
Uncategorizable	13(14.4)	3(7.3)	13(19.4)	13(25.0)	12(22.6)	6(14.6)	3(6.8)	2(4.1)

TABLE 8

MIND IF WOMAN'S SALARY HIGHER?
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	13(14.4)	8(19.5)	11(16.4)	10(19.2)	10(18.9)	4(9.8)	9(20.5)	9(18.4)
No	77(85.6)	33(80.5)	56(83.6)	42(80.8)	43(81.1)	37(90.2)	35(79.5)	40(81.6)

TABLE 9

SUCCESS EXPECTED BY YOURSELF?
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	86(100.0)	39(97.5)	65(100.0)	50(100.0)	52(98.1)	40(100.0)	43(100.0)	47(97.9)
No	-0-	1(2.5)	-0-	-0-	1(1.9)	-0-	-0-	1(2.1)

TABLE 10

SUCCESS EXPECTED BY MOTHER
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	77(96.3)	38(95.0)	62(96.9)	50(98.0)	53(100.0)	39(100.0)	43(100.0)	47(95.2)
No	3(3.7)	2(5.0)	2(3.1)	1(2.0)	-0-	-0-	-0-	2(4.8)

TABLE 11

SUCCESS EXPECTED BY FATHER
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Grouyp	Cross-Sectional
Yes	75(98.7)	38(95.0)	56(93.3)	47(97.9)	41(95.3)	37(97.4)	35(100.0)	44(97.8)
No	1(1.3)	2(5.0)	4(6.7)	1(2.1)	2(4.7)	1(2.6)	-0-	1(2.2)

TABLE 12

SUCCESS EXPECTED BY FRIENDS
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	81(95.3)	39(97.5)	58(93.5)	46(92.0)	44(86.3)	35(92.1)	44(100.0)	48(98.0)
No	4(4.7)	1(2.5)	4(6.5)	4(8.0)	7(13.7)	3(7.9)	-0-	1(2.0)

TABLE 13

SUCCESS EXPECTED BY DATE, MATE
(Fear of Success)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	79(97.5)	(97.1)	58(96.7)	44(97.8)	49(98.0)	32(91.4)	38(100.0)	48(100.0)
No	2(2.5)	1(2.9)	2(3.3)	1(2.2)	1(2.0)	3(8.6)	-0-	-0-

IMPOSTER

TABLE 1

ABILITIES HELPFUL IN SCHOOL
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Intellect	23(34.3)	14(35.0)	29(50.0)	27(49.1)	26(53.1)	17(45.9)	29(64.4)	21(46.7)
Non-Intellect	35(52.2)	18(45.0)	23(39.7)	27(49.1)	21(42.9)	18(48.6)	13(28.9)	24(53.3)
Uncategorized	-	8(20.0)	6(10.3)	1(1.8)	2(4.1)	2(5.4)	3(6.7)	-0-

TABLE 2

ABILITIES HELPFUL IN SCHOOL
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Internal	60(92.3)	34(87.2)	53(91.4)	55(100.0)	48(98.0)	33(89.2)	42(95.5)	45(97.8)
External	1(1.5)	4(10.3)	-0-	-0-	-0-	3(8.1)	1(2.3)	1(2.2)
God or Religion	-	-0-	-0-	-0-	1(2.0)	-0-	-0-	-0-
Uncategorizable	4(6.2)	1(2.6)	5(8.6)	-0-	-0-	1(2.7)	1(2.3)	-0-

TABLE 3

BRIGHTNESS VS. SAME SEX
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Bright	41(48.8)	23(54.8)	33(51.6)	37(63.8)	25(42.4)	16(41.0)	22(44.9)	24(42.1)
Slightly Brighter	25(29.8)	10(23.8)	18(28.1)	15(25.9)	17(28.8)	14(35.9)	14(28.6)	21(36.8)
The Same	15(17.9)	9(21.4)	11(17.2)	6(10.3)	14(23.7)	9(23.1)	10(20.4)	12(21.1)
Slightly Less Bright	1(1.2)	-0-	2(3.1)	-0-	3(5.1)	-0-	2(4.1)	-0-
Moderately-Much Less Bright	2(2.4)	-0-	-0-	-0-	-0-	-0-	1(2.0)	-0-

TABLE 4

BRIGHTNESS VS. OPPOSITE SEX
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Brighter	51(60.7)	20(47.6)	27(42.2)	35(60.3)	32(54.2)	15(38.5)	22(44.9)	30(52.6)
Slightly Brighter	22(26.2)	13(31.0)	15(23.4)	14(24.1)	22(37.3)	14(35.9)	11(22.4)	12(21.1)
The Same	9(10.7)	7(16.7)	18(28.1)	8(13.8)	4(6.8)	10(25.6)	13(26.5)	13(22.8)
Slightly Less Bright	1(1.2)	2(4.8)	4(6.2)	1(1.7)	1(1.7)	-0-	2(4.1)	2(3.5)
Moderately-Much Less Bright	1(1.2)	-0-	-0-	-0-	-0-	-0-	1(2.0)	-0-

TABLE 5

BRIGHTNESS VS. SAME MAJOR, GPA
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Bright	24(28.6)	6(14.3)	24(37.5)	15(25.9)	19(32.2)	8(20.5)	10(20.4)	18(31.6)
Slightly Brighter	15(17.9)	12(28.6)	19(29.7)	23(39.7)	16(27.1)	16(41.0)	8(16.3)	14(24.6)
The Same	41(48.8)	21(50.0)	16(25.0)	17(29.3)	21(35.6)	14(35.9)	28(57.1)	23(40.4)
Slightly Less Bright	3(3.6)	3(7.1)	5(7.8)	3(5.2)	3(5.1)	1(2.6)	2(4.1)	2(3.5)
Moderately-Much Less Bright	1(1.2)	-0-	-0-	-0-	-0-	-0-	1(2.0)	-0-

TABLE 6

WORK HARD VS. OPPOSITE SEX
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Hard	35(41.7)	13(31.0)	30(46.9)	12(20.7)	27(45.8)	6(15.4)	24(49.0)	31(54.4)
Slightly Harder	31(36.9)	14(33.3)	13(20.3)	19(32.8)	21(35.6)	16(41.0)	14(28.6)	14(24.6)
The Same	12(14.3)	13(31.0)	14(21.9)	10(17.2)	4(6.8)	12(30.8)	5(10.2)	7(12.3)
Slightly Less	4(4.8)	1(2.4)	7(10.9)	11(19.0)	4(6.8)	4(10.3)	6(12.2)	3(5.3)
Moderately-Much Less	2(2.4)	1(2.4)	-0-	6(10.3)	3(5.1)	1(2.6)	-0-	2(3.5)

TABLE 7

WORK HARD VS. SAME SEX
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately Hard	35(41.7)	9(21.4)	24(37.5)	14(24.1)	24(40.7)	6(15.4)	20(40.8)	21(36.8)
Slightly Harder	21(25.0)	10(23.8)	17(26.6)	21(36.2)	19(32.2)	7(17.9)	8(16.3)	19(33.3)
The Same	23(27.4)	20(47.6)	12(18.7)	9(15.5)	12(20.3)	18(46.2)	16(32.7)	10(17.5)
Slightly Less	4(4.8)	3(7.1)	11(17.2)	10(17.2)	3(5.1)	7(17.9)	4(8.2)	7(12.3)
Moderately-Much Less	1(1.2)	-0-	-0-	-0-	1(1.7)	1(2.6)	1(2.0)	-0-

TABLE 8

TIME, EFFORT VS. SAME MAJOR, GPA
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Much-Moderately More	21(25.0)	10(23.8)	18(28.1)	6(10.3)	23(39.0)	5(12.8)	9(18.4)	10(17.5)
Slightly More Time	17(20.2)	7(16.7)	7(10.9)	9(15.5)	11(18.6)	9(23.1)	12(24.5)	12(21.1)
The Same Time	25(29.8)	7(16.7)	13(20.3)	13(22.4)	12(20.3)	12(30.8)	10(20.4)	21(36.8)
Slightly Less Time	19(22.6)	14(33.3)	23(35.9)	17(29.3)	12(20.3)	10(25.6)	17(34.7)	13(22.8)
Moderately-Much Less	2(2.4)	4(9.5)	3(4.7)	13(22.4)	1(1.7)	3(7.7)	1(2.0)	1(1.8)

TABLE 9

THREATS TO EDUCATIONAL PLANS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	46(54.8)	23(54.8)	34(53.1)	21(36.2)	33(55.9)	16(41.0)	17(34.7)	25(34.9)
Intellect	4(4.8)	1(2.4)	4(6.2)	2(3.4)	-0-	1(2.6)	2(4.1)	1(1.8)
Non-Intellectual	32(38.1)	17(40.5)	24(37.5)	33(56.9)	24(40.7)	22(56.4)	28(57.1)	29(50.9)
Uncategorizable	2(2.4)	1(2.4)	2(3.1)	2(3.4)	2(3.4)	-0-	2(4.1)	2(3.5)

TABLE 10

THREATS TO EDUCATIONAL PLANS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	47(56.0)	23(54.8)	34(53.1)	21(36.2)	33(55.9)	16(41.0)	17(34.7)	25(43.9)
Internal	10(11.9)	11(26.2)	8(12.5)	7(12.1)	3(5.1)	9(23.1)	6(12.2)	8(14.0)
External	25(29.8)	7(16.7)	20(31.2)	28(48.3)	22(37.3)	14(35.9)	24(49.0)	22(38.6)
Uncategorizable	2(2.4)	1(2.4)	2(3.1)	2(3.4)	1(1.7)	-0-	2(4.1)	2(3.5)

TABLE 11

THREATS TO EDUCATIONAL PLANS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
No or Nothing	44(52.4)	23(54.8)	34(53.1)	21(36.2)	33(56.9)	16(41.0)	16(33.3)	25(43.9)
Fear of Success	4(4.8)	7(16.7)	3(4.7)	1(1.7)	2(3.4)	6(15.4)	2(4.2)	3(5.3)
All Other Answers	36(42.9)	12(28.6)	27(42.2)	36(62.1)	23(39.7)	17(43.6)	30(62.5)	29(50.9)

TABLE 12

RANK CAREER-HELPFUL TRAITS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Intellect	38(66.7)	18(43.9)	31(59.6)	24(44.4)	24(60.0)	18(51.4)	25(59.5)	23(48.9)
Non-Intellect	18(31.6)	23(56.1)	21(40.4)	30(55.6)	12(30.0)	17(48.6)	17(40.5)	24(51.1)
Other Responses	1(1.8)	-0-	-0-	-0-	4(10.0)	-0-	-	-0-

TABLE 13

SUCCESS DUE TO LUCK OR SKILLS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
100% Abilities	11(13.3)	2(4.8)	17(26.6)	10(17.2)	8(13.6)	3(7.7)	12(24.5)	4(7.0)
75% Abilities	51(61.4)	33(78.6)	44(68.7)	45(77.6)	31(52.5)	30(76.9)	32(65.3)	41(71.9)
50% Abilities	17(20.5)	7(16.7)	2(3.1)	2(3.4)	20(33.9)	6(15.4)	5(10.2)	10(17.5)
25% Abilities	2(2.4)	-0-	-0-	1(1.7)	-0-	-0-	-	1(1.8)
100% Good Luck	2(2.4)	-0-	1(1.6)	-0-	-0-	-0-	-	1(1.8)

TABLE 14

INTELLECT OVERRATED BY TEACHERS?
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	21(25.3)	12(28.6)	15(23.4)	15(25.9)	13(22.0)	6(15.4)	13(26.5)	19(33.3)
Occasionally	42(50.6)	26(61.9)	25(39.1)	41(70.1)	32(54.2)	30(76.9)	27(55.1)	25(43.9)
Often	16(19.3)	3(7.1)	16(25.0)	2(3.4)	10(16.9)	2(5.1)	8(16.3)	10(17.5)
Almost Always	4(4.8)	1(2.4)	8(12.5)	-0-	4(6.8)	1(2.6)	1(2.0)	3(5.3)

TABLE 15

INTELLECT OVERRATED BY MOTHER?
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	24(28.9)	17(40.5)	19(29.7)	22(37.9)	22(37.3)	17(43.6)	25(51.0)	25(43.9)
Occasionally	37(44.6)	20(47.6)	21(32.8)	30(51.7)	19(32.2)	14(35.9)	20(40.8)	20(35.1)
Often	16(19.3)	3(7.1)	20(31.2)	6(10.3)	8(13.6)	7(17.9)	2(4.1)	7(12.3)
Almost Always	6(7.2)	2(4.8)	4(6.2)	-0-	10(16.9)	1(2.6)	2(4.1)	5(8.8)

TABLE 16

INTELLECT OVERRATED BY FATHER?
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Almost Never	12(17.9)	16(40.0)	16(29.6)	24(43.6)	17(34.7)	17(43.6)	18(45.0)	24(48.0)
Occasionally	33(49.3)	12(30.0)	19(35.2)	27(49.1)	19(38.8)	14(35.9)	16(40.0)	13(26.0)
Often	13(19.4)	9(22.5)	17(31.5)	4(7.3)	8(16.3)	6(15.4)	2(5.0)	10(20.0)
Almost Always	9(13.4)	3(7.5)	2(3.7)	-0-	5(10.2)	2(5.1)	4(10.0)	3(6.0)

TABLE 17

SUCCESS EXPECTED BY YOURSELF
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	82(98.8)	39(97.5)	63(100.0)	56(100.0)	58(98.3)	39(100.0)	48(60.0)	55(98.2)
No	1(1.2)	1(2.5)	-0-	-0-	1(1.7)	-0-	-0-	1(1.8)

TABLE 18

SUCCESS EXPECTED BY FATHER
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	73(98.6)	38(95.0)	55(93.2)	52(96.3)	49(96.1)	36(94.7)	40(97.6)	51(96.2)
No	1(1.4)	2(5.0)	4(6.8)	2(3.7)	2(3.9)	2(5.3)	1(2.4)	2(3.8)

TABLE 19

SUCCESS EXPECTED BY MOTHER
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	72(94.7)	38(95.0)	60(96.8)	56(98.2)	58(100.0)	38(100.0)	48(100.0)	56(98.2)
No	4(5.3)	2(5.0)	2(3.2)	1(1.8)	-0-	-0-	-0-	1(1.8)

TABLE 20

SUCCESS EXPECTED BY FRIENDS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	75(92.6)	39(97.5)	57(95.0)	50(90.9)	49(86.0)	35(94.6)	47(97.9)	55(96.5)
No	6(7.4)	1(2.5)	3(5.0)	5(9.1)	8(14.0)	2(5.4)	1(2.1)	2(3.5)

TABLE 21

SUCCESS EXPECTED BY DATE, MATE
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Yes	75(96.2)	34(97.1)	55(96.5)	50(98.0)	56(100.0)	32(91.4)	44(100.0)	54(98.2)
No	3(3.8)	1(2.9)	2(3.5)	1(2.0)	-0-	3(8.6)	-0-	1(1.8)

TABLE 22

RANK CAREER HELPFUL TRAITS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
Internal	52(96.3)	38(95.0)	50(96.2)	50(90.9)	34(97.1)	33(94.3)	39(92.9)	42(89.4)
External	2(3.7)	2(5.0)	2(3.8)	5(9.1)	1(2.9)	2(5.7)	3(7.1)	5(10.6)

TABLE 23

RANK CAREER HELPFUL TRAITS-CHARM
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	-0-	1(2.4)	1(2.0)	2(3.6)	7(14.3)	-0-	-0-	1(2.1)
2nd of Eight	-0-	-0-	-0-	1(1.8)	2(4.1)	1(2.8)	-0-	-0-
3rd of Eight	3(5.2)	1(2.4)	1(2.0)	2(3.6)	1(2.0)	-0-	-0-	-0-
4th of Eight	3(5.2)	4(9.8)	8(15.7)	3(5.4)	1(2.0)	6(16.7)	4(9.3)	4(8.5)
5th of Eight	8(13.8)	-0-	6(11.8)	9(16.1)	7(14.3)	7(19.4)	5(11.6)	6(12.8)
6th of Eight	19(32.8)	11(26.8)	4(7.8)	15(26.8)	13(26.5)	12(33.3)	5(11.6)	14(29.8)
7th of Eight	13(22.4)	17(41.5)	19(37.3)	20(35.7)	10(20.4)	7(19.4)	16(37.2)	15(31.9)
8th of Eight	12(20.7)	7(17.1)	12(23.5)	4(7.1)	8(16.3)	3(8.3)	13(30.2)	7(14.9)

TABLE 24

RANK CAREER HELPFUL TRAITS-HARD WORK
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	19(35.8)	18(43.9)	19(35.8)	27(49.1)	23(47.9)	16(43.2)	13(30.2)	17(36.2)
2nd of Eight	13(24.5)	10(24.4)	11(20.8)	8(14.5)	5(10.4)	7(18.9)	10(23.3)	7(14.9)
3rd of Eight	18(34.0)	10(24.4)	16(30.2)	12(21.8)	13(27.1)	10(27.0)	13(30.2)	14(29.8)
4th of Eight	1(1.9)	3(7.3)	4(7.5)	4(7.3)	4(8.3)	1(2.7)	6(14.0)	3(6.4)
5th of Eight	1(1.9)	-0-	1(1.9)	3(5.5)	-0-	2(5.4)	-0-	3(6.4)
6th of Eight	1(1.9)	-0-	1(1.9)	1(1.8)	-0-	-0-	-0-	3(6.4)
7th of Eight	-0-	-0-	1(1.9)	-0-	2(4.2)	-0-	1(2.3)	-0-
8th of Eight	-0-	-0-	-0-	-0-	1(2.1)	1(2.7)	-0-	-0-

TABLE 25

RANK CAREER HELPFUL TRAITS-SUPPORTIVE MATE
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	-0-	1(2.4)	1(2.0)	3(5.5)	7(14.9)	-0-	3(7.0)	-0-
2nd of Eight	-0-	-0-	1(2.0)	1(1.8)	1(2.1)	1(2.8)	1(2.3)	6(12.8)
3rd of Eight	1(1.8)	3(7.3)	2(3.9)	5(9.1)	-0-	2(5.6)	2(4.7)	2(4.3)
4th of Eight	11(19.3)	12(29.3)	10(19.6)	15(27.3)	1(2.1)	13(36.1)	11(25.6)	7(14.9)
5th of Eight	10(17.5)	10(24.4)	9(17.6)	12(21.8)	6(12.8)	7(19.4)	9(20.9)	13(27.7)
6th of Eight	19(33.3)	6(14.6)	16(31.4)	5(9.1)	8(17.0)	4(11.1)	6(14.0)	11(23.4)
7th of Eight	10(17.5)	3(7.3)	5(9.8)	6(10.9)	10(21.3)	7(19.4)	4(9.3)	6(12.8)
8th of Eight	6(10.5)	6(14.6)	7(13.7)	8(14.5)	14(29.8)	2(5.6)	7(16.3)	2(4.3)

TABLE 26

RANK CAREER HELPFUL TRAITS-INTELLIGENCE
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	15(27.3)	17(41.5)	14(27.5)	17(30.9)	22(45.8)	14(37.8)	15(34.9)	16(34.0)
2nd of Eight	17(30.9)	17(41.5)	26(51.0)	23(41.8)	9(18.7)	10(27.0)	12(27.9)	16(34.0)
3rd of Eight	19(34.5)	6(14.6)	6(11.8)	7(12.7)	14(29.2)	7(18.9)	12(27.9)	9(19.1)
4th of Eight	3(5.5)	-0-	4(7.8)	4(7.3)	2(4.2)	3(8.1)	2(4.7)	3(6.4)
5th of Eight	-0-	1(2.4)	-0-	1(1.8)	-0-	1(2.7)	1(2.3)	-0-
6th of Eight	1(1.8)	-0-	-0-	1(1.8)	-0-	1(2.7)	-0-	2(4.3)
7th of Eight	-0-	-0-	-0-	1(1.8)	-0-	1(2.7)	-0-	1(2.1)
8th of Eight	-0-	-0-	1(2.0)	1(1.8)	1(2.1)	-0-	1(2.3)	-0-

TABLE 27

RANK CAREER HELPFUL TRAITS-SOCIAL CONTACTS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	2(3.8)	1(2.4)	-0-	3(5.4)	8(17.0)	2(5.6)	-0-	2(4.3)
2nd of Eight	2(3.8)	-0-	1(2.0)	2(3.6)	3(6.4)	1(2.8)	2(4.7)	3(6.4)
3rd of Eight	3(5.7)	1(2.4)	3(5.9)	5(8.9)	3(6.4)	4(11.1)	3(7.0)	7(14.9)
4th of Eight	21(39.6)	14(34.1)	18(35.3)	13(23.2)	15(31.9)	7(19.4)	6(14.0)	18(38.3)
5th of Eight	11(20.8)	11(26.8)	13(25.5)	16(28.6)	6(12.8)	8(22.2)	15(34.9)	10(21.3)
6th of Eight	7(13.2)	6(14.6)	10(19.6)	12(21.4)	5(10.6)	6(16.7)	12(27.9)	3(6.4)
7th of Eight	5(9.4)	6(14.6)	4(7.8)	4(7.1)	3(6.4)	5(13.9)	2(4.7)	4(8.5)
8th of Eight	2(3.8)	2(4.9)	2(3.9)	1(1.8)	4(8.5)	3(8.3)	3(7.0)	-0-

TABLE 28

RANK CAREER HELPFUL TRAITS-GOOD LUCK
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	2(3.6)	-0-	1(2.0)	4(7.3)	5(10.4)	-0-	-0-	3(6.4)
2nd of Eight	1(1.8)	1(2.5)	2(3.9)	-0-	1(2.1)	1(2.7)	-0-	1(2.1)
3rd of Eight	1(1.8)	-0-	1(2.0)	3(5.5)	1(2.1)	1(2.7)	-0-	2(4.3)
4th of Eight	5(9.1)	5(12.5)	2(3.9)	5(9.1)	3(6.2)	1(2.7)	4(9.3)	1(2.1)
5th of Eight	10(18.2)	9(22.5)	7(13.7)	5(9.1)	5(10.4)	2(5.4)	8(18.6)	1(2.1)
6th of Eight	4(7.3)	5(12.5)	5(9.8)	10(18.2)	7(14.6)	2(5.4)	9(20.9)	5(10.6)
7th of Eight	12(21.8)	3(7.5)	11(21.6)	6(10.9)	4(8.3)	8(21.6)	8(18.6)	2(4.3)
8th of Eight	20(36.4)	17(42.5)	22(43.1)	22(40.0)	22(45.8)	22(59.5)	14(32.6)	32(68.1)

TABLE 29

RANK CAREER HELPFUL TRAITS-PERSONAL ATTRACTIVENESS
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	-0-	1(2.4)	-0-	1(1.8)	6(12.5)	1(2.7)	1(2.4)	-0-
2nd of Eight	4(7.1)	-0-	4(7.8)	2(3.6)	2(4.2)	1(2.7)	-0-	-0-
3rd of Eight	1(1.8)	2(4.9)	3(5.9)	1(1.8)	3(6.2)	2(5.4)	1(2.4)	1(2.1)
4th of Eight	3(5.4)	-0-	1(2.0)	3(5.4)	10(20.8)	2(5.4)	7(16.7)	2(4.3)
5th of Eight	9(16.1)	8(19.5)	13(25.5)	8(14.3)	11(22.9)	10(27.0)	5(11.9)	12(25.5)
6th of Eight	6(10.7)	12(29.3)	16(31.4)	10(17.9)	4(8.3)	6(16.2)	12(28.6)	8(17.0)
7th of Eight	19(33.9)	10(24.4)	7(13.7)	15(26.8)	4(8.3)	9(24.3)	9(21.4)	19(40.4)
8th of Eight	14(25.0)	8(19.5)	7(13.7)	16(28.6)	8(16.7)	6(16.2)	7(16.7)	5(10.6)

TABLE 30

RANK CAREER HELPFUL TRAITS-KNOWLEDGE
(Imposter)

	Black Women Science	White Women Science	Black Men Science	White Men Science	Black Women Non-Science	White Women Non-Science	Longitudinal Group	Cross-Sectional
1st of Eight	18(32.1)	7(17.1)	17(32.7)	8(14.5)	26(53.1)	7(18.9)	11(25.6)	8(17.0)
2nd of Eight	18(32.1)	13(31.7)	11(21.2)	18(32.7)	18(36.7)	14(37.8)	17(39.5)	14(29.8)
3rd of Eight	8(14.3)	18(43.9)	18(34.6)	19(34.5)	3(6.1)	11(29.7)	13(30.2)	13(27.7)
4th of Eight	4(7.1)	3(7.3)	3(5.8)	6(10.9)	1(2.0)	1(2.7)	2(4.7)	9(19.1)
5th of Eight	3(5.4)	-0-	2(3.8)	1(1.8)	-0-	-0-	-0-	2(4.3)
6th of Eight	5(8.9)	-0-	1(1.9)	1(1.8)	-0-	2(5.4)	-0-	-0-
7th of Eight	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
8th of Eight	-0-	-0-	-0-	2(3.6)	1(2.0)	2(5.4)	-0-	1(2.1)